Medical Lib.
JAN 22 1923

This Issue Exceeds 80,000 Copies

THE JOURNAL

OF THE

American Medical Association

Annual Subscription, $6.00 | PUBLISHED WEEKLY | Single Copies, 20 Cents

VOLUME 80, No. 2 | 535 North Dearborn Street, CHICAGO, ILL. | JANUARY 13, 1923

CONTENTS AND SUBJECT INDEX

The Course of Mortality from Cancer in Baltimore. William Travis Howard, Jr., M.D., Baltimore.....71

Preservation of the Life of Completely Parathyroidectomized Dogs by Means of the Oral Administration of Calcium Lactate. Arno B. Luckhardt, M.D., and Benjamin Goldberg, B.S., Chicago 79

Some Ocular Phases of Little's Disease (Congenital Spastic Rigidity of the Limbs). William Campbell Posey, M.D., Philadelphia.....80

Acidosis in Hyperthyroidism. Ralph H. Major, M.D., Kansas City, Kan....83

The History of Experimental Scarlet Fever in Man. Ludvig Hektoen, M.D., Chicago 84

Isolated Disease of the Scaphoid. B. W. Moffat, M.D., New York....87

Bacteriologic and Clinical Experience with Bacillus Acidophilus. Louis M. Gompertz, M.D., New Haven, Conn., and Martin G. Vorhaus, M.D., New York 90

Leishmaniasis in the United States. H. K. Faber, M.D., and H. Schussler, Jr., M.D., San Francisco.....93

Electrocardiograms and Heart Muscle Disease. H. E. B. Pardee, M.D., and A. M. Master, M.D., New York...98

CLINICAL NOTES, SUGGESTIONS AND NEW INSTRUMENTS

A Self-Retaining Palate Retractor. George D. Wolf, M.D., New York..101

Inhalation of Barium in Solution. C. R. Fishel, M.D., Tacoma, Wash.....102

Combination Sedan and Ambulance. John B. Potts, M.D., Omaha.....102

Complete Anuria Following a Mercuric Chlorid Douche. G. W. Outerbridge, M.D., Philadelphia.....102

Double Uterus: Cesarean Section for Delivery of Pregnant Right Uterus at Term. John A. Shoemaker, M.D., Berea, Ohio.....103

A Case of Functional Aphonia, Cured Under General Anesthetic. C. N. Howard, M.D., Warsaw, Ind.....104

Practical Surgical Pathologic Observations and Deductions. Albert C. Broders, M.D., Rochester, Minn...104

Pneumonia from Inhalation of Zinc Stearate Talcum Powder. William Edmonds, M.D., Nebraska City..105

Rectal Binder. Sidney Furst, M.D., New York.....105

SPECIAL ARTICLE

The Care and Feeding of Infants (Continued).....106

MEDICAL EDUCATION

Postgraduate Study Abroad. William A. Brams, M.D., Chicago.....130

EDITORIALS

Possibilities for Specific Chemotherapy of Bacterial Infections.....110

The Quest of Potential Energy.....111

Does School Work Impair Health?.112

Experimental Ascariasis in Man....112

CURRENT COMMENT

Duration of Breast Milk Feedings..113

Early Silicosis and Tuberculosis....113

(Subject Index on next page)

Entered as Second-Class Matter, June 25, 1885, at the Postoffice at Chicago, Ill., under Act of March 3, 1879. Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized on June 14, 1918. If undeliverable, return postage is guaranteed

Copyright, 1923, by the American Medical Association NEXT ANNUAL SESSION, SAN FRANCISCO, JUNE 25-29, 1923

BOOKS

Full knowledge of the worth of books comes only with a library of one's own.

—

But in building your library look to it that the books you select are those you will consult with confidence.

PUBLISHED IN AUGUST—REPRINTED IN SEPTEMBER

Scudder's Fractures

Dr. Scudder's *Treatment of Fractures* is offered the medical profession after the most thorough revision it has undergone in many years. The revision has been made along the surgical highways opened up by the following progressive improvements in the treatment of fractures:

The Carrel-Dakin treatment of infected wounds.

Recognition of the importance of the skilled immediate treatment of recent fractures and their complications.

The imminent universal acceptance of the Thomas splint and the principles of its use.

Indirect and direct traction in correcting shortening in fractures of the long bones.

The safety and efficiency of direct bony traction.

The necessity of an x-ray of every fracture.

The revolt against the general use of metallic sutures and plates.

The adoption of the suspension of fractures of the extremities.

The necessity of the early active movement of joints contiguous to the fracture; the value of active as distinguished from passive movements of joints; early active movement of septic joints.

Acknowledgment of the soundness of the Whitman method of treating fractures of the neck of the femur.

The segregation of patients with fractures of bone in hospital wards.

The 1252 illustrations in this book are noteworthy for the manner in which they graphically point out the right way of doing things.

Octavo volume of 748 pages, with 1252 illustrations. By CHARLES L. SCUDDER, M.D., Consulting Surgeon to the Massachusetts General Hospital. Cloth, $8.50 net.

SAUNDERS, *Publishers*

See Page 3

SUBJECT INDEX TO THIS ISSUE

The letters used to explain in which department the matter indexed appears are as follows: The Star (*) indicates an Original Article; "E," Editorial; "C," Correspondence; "T," Therapeutics; "Ml," Medicolegal; "P," Propaganda for Reform; "ME," Medical Economics.

Abdominal glands, calcified..... 142
Abnormalities, constitutional causes of... 146
Acidosis in hyperthyroidism..... *83
Amaurosis, thrombotic, cortical..... 138
Ambulance and sedan combined..... *102
Anaphylaxis in angioneurotic eruptions.... 140
Anemia, pernicious, cause and cure of.. 139
pernicious, with intestinal stenosis..... 150
Anesthesia mishaps, glucose in..... 149
Aneurysm of large pelvic vessels..... 144
Angioneurotic eruptions and anaphylaxis.. 140
Anuria following a mercuric chlorid douche. *102
Anus, congenital, vaginal..... 144
Aphonia, general anesthetic for..... *104
Appendicitis in women..... 133
Ascariasis, experimental, in man..... E-112
Asthma, bronchial 146
syphilitic 146
Automobile, combination..... *102
Bacillus acidophilus *90
Bacteriophagy, history of..... 145
Barium, inhalation of, in solution..... *102
Benzyl benzoate and nitrogenous metabolism 139
Biliary drainage, diagnostic value of..... C-128
Bilirubinemia in icterus..... 143
Birth report not privileged..... Ml-132
Bladder, hydatid fremitus in..... 144
Blood, action of hydrotherapy and heat on. 147
cholesterin in leishmaniasis..... 144
diazo reaction and leukocyte count..... 150
plasma, lability of colloids of..... 148
pressure, high, and epinephrin..... 145
pressure, high, and cardiorenal disease.. 135
pressure and phenolic compounds..... 142
Bones, tuberculosis of..... 148
Book Notices **131**
Books Received..... **Adv. page 28**
Brain, purpura with hemorrhage..... 144
Breathing, costal and abdominal..... 148
Bronchiectasis, graded extrapleural thoracoplasty for 140
Bronchitis, chronic..... 142
Calcium lactate orally in treatment of parathyroidectomized dogs *79
Cancer, experimental arsenic..... 141
experimental, paraffin 141
experimental, produced by irritation.... 141
experimental soot 141
mortality in Baltimore..... *71
spontaneous cures of..... 144
tar, effect of cessation of irritant on.... 141
Cerebrospinal fluid, examination of..... 148
urea content of..... 142
Cesarean section, auto, in a mouse..... C-128
Chemotherapy, present possibilities for... E-110
Children, predisposition of age in..... 147
does school work impair health?..... E-112
Cholecystectomy without drainage..... 133
Cholecystenterostomy, plastic..... 145
Cinchophen, dosage of..... 129
Club foot, treatment of..... 141
Colloids, experiments on therapeutic correction of swelling of..... 147
influence of light on stability of..... 148
of blood plasma, lability of..... 148
Congenital diseases, general causes of.... 146
Conjunctivitis, habronemic 142
Correspondence **127**
Cranium, fracture of..... 145
Cryptogenous septicemia 143
Deaths **125**
Depersonalization following meat poisoning 148
Dermatoses, nervous, so-called..... 147
Diabetes, gangrene in, treatment of..... 137
high fat diet in..... 139
inulin in 147
renal, and glycosuria of pregnancy..... 149
Diathermy in multiple roentgen epitheliomas 142
Diazo reaction and leukocyte figure..... 150
Disease, congenital, causes of..... 146
Dizziness, induced motor action..... 149
Duodenum secretion..... 148
Ear, itching of, in pyrosis..... 147
Echinococcosis 144
of lung 137
Electrocardiograms and heart muscle disease *98
Emphysema, pulmonary..... 142
Encephalitis, disturbance of respiratory rhythm following 137
Parkinson's disease as sequel to..... 140
Endocarditis, slow 144
Endotheliomas, malignant..... 136
of cheek 133
Energy, potential, quest of..... E-111
Eosinophilia in stomach content..... 145
Epididymis, changes in, after resection of spermatic veins 144
Epilepsy, roentgen-ray treatment..... 143
Epinephrin, action of..... 145
and hypertension 145
Epitheliomas, multiple roentgen..... 142
Eruptions, angioneurotic, and anaphylaxis. 140
Erythroderma, macular, chronic..... 129
Eye in Little's disease..... *80
Faisceau de Turck..... 137
Fallopian tubes, malformations of..... 143
Falls, deaths from ab-101
Filter, slow working sand filter..... 149
Fistula, bronchobiliary..... 141
Foreign Letters **121**
Gallbladder surgery, results of..... 138
Gangrene, diabetic, treatment of..... 137
Glandular fever 135
Glucose, administration of soda and..... 129
Glycosuria, artificial, in pregnancy..... 149
of pregnancy and renal diabetes..... 149
Goiter, sclerodermic syndrome with..... 143
Gonococcus types, differentiation of..... 149
Gonorrhea, complicated, treatment of..... 143
Government Services **120**
Hearing, mechanism of..... 145
Heart disease and pregnancy..... 135
disease and hypertension..... 135
disease, vital capacity in..... 135
muscle disease and electrocardiograms.. *98
Hematomas, ovarian, of endometrial type.. 136
Hemoclastic crisis in pregnant..... 145
Hemorrhoids, conservative treatment of... 147
Hip dislocation, congenital, treatment of.. 146
ankylosis of..... 148
Hydrocephalus, experiments on..... 144
Hydronephrosis, new pyelo-ureteral operation for 133
Hydrotherapy, action of, on blood..... 147
Hyperthyroidism, acidosis in..... *83
Ileus, spastic 150
postoperative, value of x-ray in early diagnosis of..... 134
Infant, determination as to previous viability of infant found drowned..... 128
feeding and care of..... 106
feeding, duration of breast milk feedings E-113
Influenza, pneumococcal..... 141
biologic products for..... 129
Insulin, present status of..... 129
Intestines, stenosis in, and anemia..... 150
Inulin in diabetes..... 147
Jaundice, bilirubinemia in..... 143
cirrhosis of liver with splenomegaly and. 147
Kala azar in United States..... *93
Kidney disease and hypertension..... 135
Knee, loose bodies in extraction in..... 145
Kolmer modification of Wassermann test. 136
Leishmaniasis, cholesterin content in..... 144
in United States..... *93
Leukoderma, quartz light in treatment of.. 139
Little's disease, ocular phases of..... *80
Liver, cirrhosis with icterus and splenomegaly 147
Lung, hydatid cyst of..... 137
Lymphadenitis, mesenteric, surgical significance of..... 132
Marriages **125**
Meat poisoning..... 148
Medical Education, Registration..... **130**
Medicolegal **132**
Meningitis, cystic, compression of spinal cord by..... 145
Mercuric chlorid douche, anuria following. *102
Mercurochrome in puerperal sepsis..... 136
Metabolism, basal, influence of endocrines on 138
basal, pathology of..... 148
nitrogenous, and benzyl benzoate..... 139
Milk, bacillus acidophilus *90
Milk, breast, quantity and quality of..... 106
Mononucleosis, infectious 135
Morocco, prevention of diseases in..... 142
Motor action, induced..... 149
Myxedema, congenital 144
Nerves, trauma of, tardy consequences of. 150
ulnar, shifting 145
Nervous system syphilis, prevalence of.... 145
Neurosis, traumatic, not a clinical entity.. 138
New and Nonofficial Remedies..... **106**
News **114**
Nipple, Paget's disease of..... 144
Ophthalmia neonatorum 139
Oriental sore in United States..... *93
Ovary hematoma, endometrial type..... 136
Paget's disease of nipple..... 144
Palate retractor, self-retaining..... *101
Pancreas extracts and depancreatized animal 139
function, studies in..... 137
Parathyroidectomy, calcium lactate after... *79
Peritoneal drainage..... 134
Peritonitis, diffuse, septic absorption in... 138
improvements in treatment of..... 147
Phenolic compounds, variations of blood pressure caused by..... 142
Pneumonia, treatment by serum free solution of pneumococcus antibodies..... 135
biologic products for..... 129
from inhalation of zinc stearate..... *105
Pneumothorax, oxygen to start..... 144
Postgraduate study abroad..... ME-130
Pregnancy, artificial glycosuria in..... 149
and tuberculosis 142
complicating heart disease..... 135
glycosuria of, and renal diabetes..... 149
hemoclastic crisis in..... 145
refractometer index of serum of..... 145
Propaganda for Reform..... **127**
Proprietary preparations, names of..... C-127
Prostitutes, syphilitic, quarantining of.. Ml-132
Pseudo-obesity 147
Psychosis, traumatic, not a clinical entity.. 138
Puerperal sepsis, mercurochrome in..... 136
Purpura with ventricular hemorrhage..... 144
Pylorus stenosis, medical treatment of..... 139
Pyrosis, itching of ears in..... 147
Quarantining of syphilitic prostitutes.... Ml-132
Quartz light in leukoderma..... 139
Queries and Minor Notes..... **128**
Quinin and sugar mobilization..... 139
Radium, sterility from use of..... C-127
Rectum binder..... *105
Rodent, physiologic research on..... 145
Roentgen epitheliomas cured by diathermy. 142
rays, healing of wounds after..... 147
rooms, ventilation of..... 129
Round ligaments, restoration of..... 141
Saccharomycetic interdigital erosion..... 136
Scaphoid, isolated diseases of..... *87
Scapula, complications of fracture of..... 144
Scarlet fever, experimental, in man..... *84
School, does school work impair health... E-112
Scleroderma and pituitary..... 143
with goiter 143
Sclerosis, multiple, familial..... 143
Secretions, internal, and blood..... 143
and respiratory exchange..... 138
Silicosis and early tuberculosis..... E-113
Smallpox, immunity against vaccinia and. 147
Society Proceedings **132**
Soda, administration of glucose and..... 129
Spermatic veins, changes in testicle and epididymis after resection of..... 144
Spinal cord, compression of, by cystic meningitis 145
Spine, rib for Albee implant in..... 145
Spleen, function of..... 146
Splenomegaly, cirrhosis of liver with icterus and 147
Stomach content, eosinophilia in..... 145
resected, plastic substitute for..... 149
secretion, psychic influence on..... 148
trouble and syphilis..... 135
ulcer, perforated..... 133
Surgery, pathologic observations and deductions *104
Sympathectomy, periarterial..... 143
Synovitis, chronic 145
Syphilis and stomach trouble..... 135
hereditary, treatment of..... 143
Tendon regeneration..... 148
Testicle, changes in, after resection of spermatic veins 144
undescended, traumatism of..... 145
Thoracoplasty for bronchiectasis..... 140
Tonics and Sedatives..... **Adv. page 22**
Tremor, striocerebellar, nature of..... 137
Tuberculosis and pregnancy..... 142
bacilli, preservation of, by glycerin..... 142
biologic diagnosis of..... 148
early silicosis and..... E-113
Typhoid, value of vaccine against..... 142
Typhus, prevention of diseases in Morocco. 142
Uncinaria larvae in soil..... 149
Urinary calculi, endemic, in Siam..... 148
Urine, retention in female..... 145
Uterus cancer, antecedents of..... 146
cancer of cervix, results of treatment... 138
cancer, precancerous condition of cervix. 136
double, cesarean section for delivery of pregnant right uterus at term..... *103
obstetric future after incision of cervix during childbirth 143
prolapse, treatment of..... 139
prolapse, vaginal operation for..... 136
Vaccine sterilized with formaldehyd..... 143
Vaccinia, immunity against smallpox and.. 147
Vascular spasms..... 143
Vital capacity..... 135
Water, slow working sand filter..... 149
Workmen's compensation..... 150
Wounds, healing of, after roentgen rays... 147
Zinc stearate, pneumonia from..... *105

BOOKS Medical Works of All Publishers. All American and English Monographs. One Order, One Remittance. Get Our Latest Bulletin. CHICAGO MEDICAL BOOK CO., Congress and Honore Sts., Chicago

HYGEIA THE NEW A. M. A. MAGAZINE OF HEALTH—For Physician and Layman
Special Advance Subscription Offer Now Open See Page 17 8 MONTHS FOR $1.00

The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 80, No. 2 CHICAGO, ILLINOIS JANUARY 13, 1923

THE COURSE OF MORTALITY FROM CANCER IN BALTIMORE *

WILLIAM TRAVIS HOWARD, JR., M.D.

BALTIMORE

Of the many interesting questions that have emerged from the intensive study of cancer which has been conducted during the last seventy years, two of the most important are: Is cancer actually increasing? and Is it really curable? As is well known, in recent years, the first question has been answered in the affirmative by some statisticians, in the negative by others; and some critical students regard the material at hand insufficient in both quantity and quality for final judgment. The confession is made freely by surgeons of talent, training and indubitable probity that their just claims of high percentages of permanent cures in suitable cases, treated early by mechanical measures, are not generally accepted at face value by the bulk of the laity and of the medical profession. In the time at my disposal, it is not possible to review the now voluminous literatures on these two questions. Following strictly the implication of its title, in the present paper attention will be limited to a consideration of the Baltimore material, and in particular to the statistical data I have gathered from the records of the city health department.

For our present purposes, at least, this qualification has decided advantages, since the medical history of the city is well known to many, and from a critical study of the statistical records of the health department, extending over a number of years, I am in a position to estimate their value with some degree of assurance.

In this discussion I shall use the term cancer as synonymous with malignant growth, or tumor, whatever its histologic structure or origin, invading surrounding tissues and forming or capable of forming metastases. Similarly, the term benign tumor is used in the ordinary pathologico-anatomic sense as denoting a true tumor that does not infiltrate neighboring tissues or form secondary growths. From the practical standpoint, the great difference lies in the fact that, speaking generally, benign tumors exert no specific deleterious influence on health, and, barring such accidental complications as hemorrhage, torsion, necrosis and infection, they derive their lethal qualities from their size and position; in other words, from the mechanical pressure which they may exercise on vital parts. Cancers, or malignant tumors, besides this quality exerted in some instances by either the primary growths or by the metastases to which they so often give rise possess peculiar powers of injuring the organs which they primarily or secondarily invade by diffuse displacement of parenchymatous and supporting structures, and the system in important parts or perhaps as a whole by intoxication.

The typically anatomically benign tumor, barring the accidents referred to, remains clinically benign or nonmalignant so long as it does not exercise undue pressure; but should it, owing to seat, to undue size or to accidental complications, surpass certain bounds, ill health and finally death will ensue as certainly as in the case of cancer. For instance, an anatomically benign tumor of the skull or of the meninges, by pressure on certain portions of the brain, may kill as certainly as a diffusely spreading cancer of this organ; and a large, ulcerating, bleeding myoma of the uterus may cause death as surely as a sarcoma or carcinoma. Again, tumors primarily benign in regard to both histologic structure and other qualities, may and often do become anatomically malignant, or, in other words, typically malignant tumors may have their origin in benign tumors as well as apparently normal tissues. Among cancers there are all grades of malignancy, but, speaking generally, physicians judge this quality by rapidity and size of growth, the extensiveness of metastases and the degree of the associated prostration or cachexia. These and other important facts regarding the essential nature of tumors, so trite to this generation of medical men, came to light but gradually. It is not surprising, therefore, that statistical nosology, until recent years, has largely ignored them. Hence we find that until comparatively recently, distinction was not drawn sharply between deaths from cancerous and noncancerous tumors. Even now in statistical nosology, partly on account of imperative necessity for condensation and partly on account of lack of specific diagnosis on death certificates, no account is taken of differences of tissue origin and structure of either benign or malignant tumors. For instance, among tumors of the uterus, no distinction is made between such distinctly different kinds of growths as sarcoma of the uterine wall, carcinoma of the body and cervix, and chorio-epithelioma, so called. They are all rated as cancer of the uterus.

CLASSIFICATION

With the exception of 1815 and 1823, deaths from cancer have been recorded in the Baltimore tables of motrality in every year since 1813, but not until 1875 were they classified by organs affected. In the latter year, deaths from this affection were classified under cancer—diffused, breast, liver, face, rectum, uterus, stomach, neck, brain and pylorus. In 1878 these rubrics were further expanded to include cancer of

* Read before the Baltimore Medical Society, Nov. 3, 1922.

* Papers from the Department of Biometry and Vital Statistics, School of Hygiene and Public Health, Johns Hopkins University, No. 79.

the tongue, testicle, intestine, esophagus, trachea, mouth, eye, mesentery, arm, omentum, elbow and spine. From 1878 to 1899, when the international supplanted the old alphabetical system of classification, the statistical rubrics were expanded to include each organ or part certified in any particular year as the seat of fatal cancer. Since 1905 the number of rubrics has been restricted to conform with exactness to the limits

TABLE 1.—AVERAGE RATE OF DEATH PER HUNDRED THOUSAND LIVING INHABITANTS BY FIVE-YEAR PERIODS, FROM CANCER AND OTHER TUMORS, AND FROM SENILITY AND CAUSES UNKNOWN IN ADULTS, FROM 1812 TO 1920, INCLUSIVE

Periods	Cancer	Tumor	Cancer and Tumor	Senility	Senility Causes Unknown	and Causes Unknown
1812-1815	4	...	4	145	...	145
1816-1820	8	...	8	123	...	123
1821-1825	4	1	5	120	39	159
1826-1830	9	...	9	119	56	175
1831-1835	7	1	8	126	30	156
1836-1840	8	2	10	95	22	117
1841-1845	9	3	12	76	40	116
1846-1850	10	3	13	96	74	170
1851-1855	11	2	13	100	56	156
1856-1860	11	3	14	94	73	167
1861-1865	14	2	16	85	63	148
1866-1870	19	4	23	89	62	151
1871-1875	24	6	30	100	36	136
1876-1880	47	7	54	72	4	76
1881-1885	47	4	51	77	3	80
1886-1890	57	6	63	74	1	75
1891-1895	59	6	65	80	...	80
1896-1900	66	7	73	65	...	65
1901-1905	76	8	84	54	...	54
1906-1910	84	5	89	41	...	41
1911-1915	97	4	102	28	...	28
1916-1920	106	5	111	12	...	12

of the revised international system. Therefore it is clear that anyone familiar with the rules of the latter classification of causes of death can appropriately place under its rubrics deaths certified as due to cancer of various organs and parts in the period of 1875-1904. Though the rubric tumor appeared in the local statistical records in 1821, 1822, 1829 and 1830, it was not until 1833 that it secured a permanent place. Since 1875 deaths from "tumor" have been classified under organs of seat, but since 1899, with relatively few exceptions, they have been thought to be due to benign tumors of the uterus and ovaries. While the deaths ascribed to tumors have not been numerous as compared with those classified under cancer, the inference is inescapable that until 1899 a not inconsiderable proportion of the former properly belonged under cancer or malignant tumor. Since 1910, under the classification rules of the Bureau of the Census, tumor of the brain has been classified under "other diseases of the nervous system." On account of growth in perfection in this period of measures of diagnosis and of operation for growths of this situation, many of which are malignant, this practice has affected to some degree the rates for both cancer and tumor.

COURSE OF MORTALITY

When, now, in attempting to measure the course of recorded annual mortality from cancer and tumor in Baltimore over this period of 108 years, we apply the commonly used standard, namely, crude rates per hundred thousand of the living population at all ages, we obtain results agreeing in general with those observed elsewhere. The chief difference lies in the fact that the local data extend over a longer period of time than is usually the case. In short, the annual crude mortality rates for tumors as a whole—that is, for deaths ascribed to cancer and to tumor taken together—were relatively low until after 1870. With considerable fluctuations from year to year, the rates ascended from 2 in 1813 to 15 in 1821 and to 20 in 1846. By 1850 the rate had fallen to 9, and it was not until 1865 that the level of 1846 was again attained. The rate reached 27 in 1868, but by 1870 it again stood at 20. From the latter date the rate rose steadily, but with some fluctuations, of course, to 117 in 1920. From 1835 to 1920 the rates for tumor alone showed considerable annual fluctuations, but they were never considerable, and exceeded 10 in but one year. During the entire period under review, the course of the rates for cancer alone has determined the shape of the curve for the combined rate. For cancer alone the rates rose from 2 in 1813 to 11 in 1835. By 1867 the rate reached 20 for the first time. Reaching 51 in 1880, the rate rose with several relatively minor recessions to 113 by 1920.

When the irregularities incident to minor annual fluctuations are smoothed out by averaging the rates for five year periods from 1816 to 1920, inclusive (Table 1 and Chart 1), a sharply cut picture of the course of mortality of these affections, as determined by crude rates, is presented. Considering first the combined rate for cancer and tumor, it will be observed that until 1865 the rate was relatively insignificant, but, on the whole, progressively though slowly rising. In the next fifteen years, that is, between 1866 and 1880, the rate increased by 135 per cent. to 54, and these affections taken together had now become very significant causes of death. For the period 1881-1885 there was a slight recession, but for the quinquennial periods 1886-1890 and 1891-1895 the rates were 63 and 65, respectively. Since 1890 the rate has risen

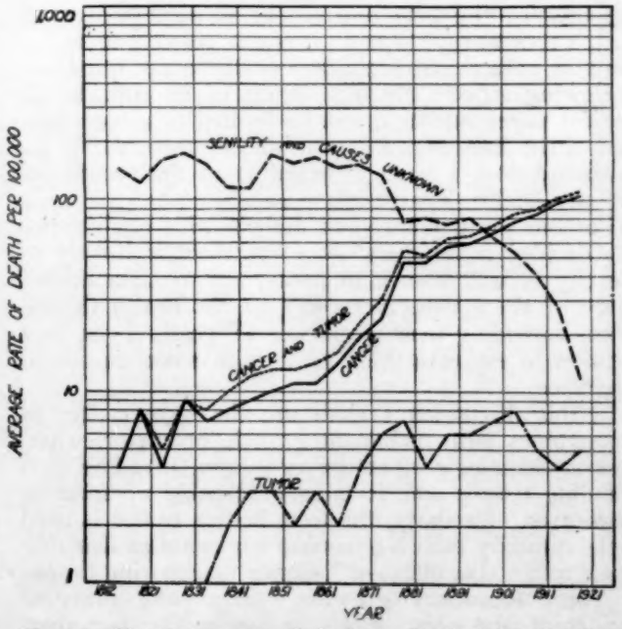


Chart 1.—The average rate of death per hundred thousand living inhabitants by five-year periods from cancer and other tumors, from 1812 to 1920, inclusive.

uninterruptedly, and for the five year period ending in 1920 it stood at 111. It is evident at a glance that the proportional contribution of tumors unqualified to the combined rate has declined on the whole since 1850, and that since 1905 has been an element of comparatively slight importance. The course of the curve of mortality for cancer follows so closely that for the combined rate that comment is unnecessary. So far,

then, it appears that since 1875, or in the last forty-five years, if these figures are accepted as reflecting correctly actual experience, mortality from tumors, benign and malignant, has increased by 100 per cent. By the same token, during the 100 years just past, the lethal force of tumors has multiplied by nearly 1,300 per cent. Since 1900, the crude death rate from cancer alone has increased by 40 per cent.

EXPLANATION OF INCREASE IN RECORDED DEATH RATES

How may these great increases in the recorded death rates for cancer be explained? To what degree do they represent actual occurrence? First to be considered in this connection are the questions of improvement in medical diagnosis and in statistical classification of deaths. The influence of improvement in diagnosis may be tested somewhat roughly in the following fashion: The deaths recorded as due to cancer since 1875 can be separated into five fairly well defined groups, (1) breast; (2) female genitals (uterus, ovary, vagina and pelvis); (3) esophagus, stomach and liver; (4) intestine and peritoneum, and (5) all other organs. The first four groups represent, respectively, Rubrics 43, 42, 40 and 41 of the international classification of causes of death, revision of 1909.

Cancer of the breast, equivalent for practical purposes to cancer of the female breast, is not only common enough, but in fatal cases is easily recognizable. It is the best example of accessible or open cancer of frequent occurrence. There is little room, therefore, for errors of diagnosis (in fatal cases) and of classification. Among the important organs not directly on the surface, but frequently the seat of fatal cancer, the uterus is most readily accessible to physical examination. Cancer of the cervix uteri, the most common form, can hardly proceed to a fatal termination without giving rise to clinical symptoms that demand attention, and in such cases the merest tyro in medicine can rarely fail in correct diagnosis. Similarly, cancer of the body of the uterus, in the last stages at least, has not, in the period now under consideration, presented difficulties of diagnosis. Nor in this period has the diagnosis of the comparatively rare primary cancer of the vagina and the external genitals of the female in fatal cases presented any serious difficulty. Cancer of the ovary and "of the pelvis," the latter appearing only occasionally in the records, is comparatively rare and is recognized chiefly at operation. Since 1876, however, few women in Baltimore with ovarian tumors have escaped operation. In cancer of these organs the important problems have not been concerned with ultimate, but rather with early recognition and with operative technic. The first two of these rubrics which we have set up present a particularly favorable material for study in this connection.

With regard to the third rubric, conditions are much less satisfactory. Malignant growths of the esophagus, though not exposed to direct view and relatively uncommon, are not only the most important cause after early life of stricture of the gullet, but before the fatal issue are associated with unmistakably characteristic symptoms. The affection may, it is true, be readily confused with cancer of the cardiac end of the stomach; but as the two affections belong to the same rubric, errors of differential diagnosis as between cancer of these two organs are of no present consequence. The diagnosis of cancer of the stomach, even yet often mistaken in fatal cases, has certainly increased greatly in accuracy since 1875. It was not until well after this date that our late colleague, Dr. Saltzer, specialized in diseases of the stomach and applied the newer methods of gastric analysis. It was some years before the routine use of chemical and microscopic methods in the diagnosis of diseases of the stomach by Osler in his clinic, opened in 1889, was adopted in other hospitals, and private clinical laboratories were established. It was hardly before 1900 that, through the work of gastro-enterologists, consulting internists, laboratory specialists (including roentgenologists), and surgeons—the latter by exposing the organ to direct inspection—the present era of intensive study of diseases of the stomach (and small intestine as well), may be said to have opened in Baltimore. It must be granted, therefore, that since 1876 the recognition of gastric cancer in its last as well as in its early stages has increased progressively in accuracy. As this organ is one of the most common seats of primary cancer in both sexes, the increased precision of diagnosis must have exercised an important part in the observed rise in the crude rate for cancer.

While primary cancer of the liver is comparatively rare, of the important viscera this organ is the one that is most frequently the seat of diagnosable malignant growths originating in other parts of the body. So propitious are conditions in this organ for the deposit and growth of metastases that, from primary cancers in themselves relatively obscure, it is often the seat of secondary growths so prominent on account of their number and size as to fix attention. While a large proportion of cancers of other organs of digestion, as the esophagus, stomach, intestine and pancreas, metastasize in the liver, it is also often involved secondarily from malignant growths not only of other abdominal organs, notably the uterus, but of such distant parts as the extremities, the central nervous system, the eye and the skin. In consequence, though these peculiarities of the liver often determine the recognition of cancer that would be otherwise overlooked, likewise they are responsible not infrequently for errors in statistical classification. With the increase of knowledge of the pathology of cancer and the improvement in diagnosis, doubtless, in many instances, deaths which in earlier years would have been credited to cancer of the liver have in more recent years been assigned in the statistical classification to the proper organs of origin. On the whole, however, it may be assumed that during the last forty-five years the diagnosis of malignant growths falling under our third group has undergone a very decided improvement.

The diagnosis of the relatively rare cancer of the small intestine has been until recent years comparatively obscure. The diagnosis and statistical classification of cancer of the colon have without doubt increased greatly in precision, but it is probable that a considerable proportion of deaths from cancer of the small and large intestine (the rectum excepted) are still classified under intestinal obstruction and other rubrics. Cancer of the rectum is comparatively accessible, and it is doubtful whether in its terminal stage any marked improvement in its diagnosis has occurred in the period under consideration. Primary cancer of the peritoneum is so infrequent as to be of relatively minor importance.

Cancer of "all other organs" embraces several distinct groups of malignant tumors which vary widely in the ease with which they may be recognized. Cancers of the skin (including the external genitals), the

nasal and buccal cavities, the eye, the larynx, the thyroid, the testes, the superficial lymph glands, the subcutaneous connective tissue, the skeletal muscles, and the bones which, taken together, represent a very considerable proportion of all malignant growths, have presented, in their fatal stages at least, no great difficulties in diagnosis that have been dissipated by recent advances in medical knowledge. In this respect they are, for the most part, directly comparable with cancers of the breast and uterus. On the other hand, cancers of the lungs and pleura, of the deeper lymphatic system, of the bladder, prostate and kidneys, of certain abdominal organs, as the pancreas, the kidneys, and the suprarenals, and of the central nervous system compose a group numerically less significant than the foregoing, and in this group diagnosis has in late years achieved very considerable progress. Out of this group, during the last ten years, fell growths of the brain, many of which are malignant. This error imposed by official rules of statistical classification has been more than counterbalanced, perhaps, by the dispersion to the proper organs of origin the members of the old statistical group "cancer, diffused." It seems likely, then, that in a substantial majority of instances the members

TABLE 2.—AVERAGE RATE OF DEATH PER HUNDRED THOUSAND LIVING INHABITANTS BY FIVE-YEAR PERIODS. FROM CANCER, FROM 1876 TO 1920, INCLUSIVE

Period	Grand Total	Total Rubrics 40 and 41	Rubric 40: Esophagus, Stomach and Liver	Rubric 41: Intestine, Rectum and Peritoneum	Total Rubrics 42 and 43	Rubric 43: Breast	Rubric 42: Uterus, Ovaries and Pelvis	All Other Organs
1876-1880	47	17	15	2	18	6	12	12
1881-1885	50	20	16	4	19	7	11	11
1886-1890	57	25	20	5	22	8	14	10
1891-1895	59	25	21	4	22	8	15	11
1896-1900	66	29	26	4	23	8	16	14
1901-1905	76	38	31	8	21	8	13	16
1906-1910	84	42	34	8	23	8	15	19
1911-1915	98	48	37	11	25	9	15	26
1916-1920	106	59	39	13	27	10	17	27

of the category of "cancer of all other organs" were as readily recognizable in 1876 as in 1920. There can be no doubt that the increased frequency with which necropsies have been conducted by trained pathologic anatomists in both homes and hospitals since the opening of the Johns Hopkins Hospital in 1889 has contributed materially to correctness of diagnosis and, in consequence, of statistical classification of deaths due to tumors.

All things considered, on the basis of increase in precision of diagnosis alone, there should be no rise in the mortality from cancer of the breast and uterus, but the advance in the rates for cancer of the esophagus, stomach and liver should be considerable; in those for cancer of the intestine and peritoneum, very marked; and, finally, the increase in the rates for cancer "of all other organs" should be somewhat less than for cancer of the esophagus, stomach and liver. The crude mortality rates for these various categories as averaged for five year periods from 1876 to 1920, inclusive, are compared in Table 2. It will be observed that though the rate for each has risen, the increases are by no means equal. While the total rate for cancer increased by 125 per cent., and the rates for cancer of the breast and of the uterus (and other female organs of generation) rose by but 67 and 42 per cent., respectively, the rate for cancer of the esophagus, stomach and liver rose by 160 per cent., and that for the intestine and peritoneum by 550 per cent. On the other hand, the rate for cancer of "all other organs" rose by only 125 per cent., or in the same proportion as the total cancer rate. The increase in the rates for cancer of the breast and of the female generative organs was notably less than it was in those for the other three categories, and the advance in the rates for the latter categories varied roughly with the scope that was assumed to be available for the effect of improvement in diagnosis. But it was assumed that, on the basis of improvement in diagnosis, there should be no gain at all in the rates for cancer of the breast and of the female generative organs. In regard to this point, it is significant that during most of the period, i. e., from 1886 to 1910, these rates were practically stationary. The slight ascents in these rates in the periods before and after these dates may well be explained by variables yet to be considered.

If the mortality for tumors as a whole and for cancer in particular has not actually but only apparently risen in the striking ratio the official figures would seem to indicate, under what statistical rubrics were the unaccounted for tumor deaths classified? While they may have been dispersed, perhaps, under many rubrics through which it is now impossible to trace them, two rubrics, causes unknown in adults and senility, probably received the majority. The rates for these averaged for five year periods are compared with those for tumors in Table 1. The decline in the rates for these indefinite causes much more than counterbalances the ascent in the rates for tumors. Though there is ample room in these rubrics for hidden cancer (as well as for other causes of death improperly assigned) even if the higher rates of later years represented no actual increase in cancer, this evidence is only suggestive. Another heading under which some cancer deaths may well be concealed is intestinal obstruction; but as this is combined in the same rubric with hernia, comparison is not here attempted. Since 1900, and particularly since 1910, special care has been taken in the division of statistics of the health department to secure full and accurate classification of deaths from tumor.

In addition to the direct influence on cancer mortality rates, which, it has already been pointed out, must be attributed to the perfection in the methods of diagnosis and treatment during the last thirty or forty years, there must be taken into consideration the possibility of an indirect effect. It is a well established fact that since 1890 an ever increasing number of patients with cancer have come to Baltimore from other places for advice and treatment. Some proportion of these must inevitably die here. It is reasonable to suppose, then, that the proportion of cancer deaths in nonresidents was low in the early period and high in recent years. Unfortunately, no data on this point are recorded before 1917. However, in the four years 1917-1920, inclusive, on an average, 17 per cent. of all recorded deaths from malignant tumors were in nonresidents—almost all of whom, it is certain, were attracted to the city by the reputation of its physicians and surgeons in diagnosis in general and in the diagnosis and treatment of cancer in particular. It is inconceivable that in early years nonresidents could have accounted for anything approaching such a high proportion of the total deaths from cancer. Unhappily, data in regard to deaths of nonresidents from benign tumors have not been tabulated, but it is well known

that each year an appreciable number of persons from out of town with growths of this type are operated on by local surgeons, and that some fail to survive the experiment. On the other hand, there is no evidence that any significant proportion of residents with either cancer or benign tumor died outside the city. Therefore the conclusion is forced that a considerable proportion of the increase in cancer mortality in later years is to be attributed to this factor.

So far, then, it has been ascertained that a very notable, though unfortunately a not accurately determinable proportion of the observed increase in crude mortality rates from malignant and other tumors in Baltimore is readily explainable on the basis of progressive improvement in diagnosis and statistical classification, and a rise in the ratio of deaths from these causes among nonresidents drawn to a medical center particularly famous for the diagnosis and treatment of these maladies.

We have come now to the consideration of the influence of such specific biologic attributes as race, sex and age on the course of mortality from these affections.

TABLE 3.—NUMBER OF DEATHS AND RATE OF DEATH PER HUNDRED THOUSAND LIVING INHABITANTS, FROM CANCER, ACCORDING TO COLOR AND SEX, FROM 1900 TO 1920, INCLUSIVE

	Total		White						Colored					
			Total		Male		Female		Total		Male		Female	
Year	Deaths	Rate	Deaths	Rate	Deaths	Rate	Deaths	Rate	Deaths	Rate	Deaths	Rate	Deaths	Rate
1900	318	63	275	64	95	46	180	81	43	55	8	23	35	81
1901	358	70	319	73	118	56	201	90	39	49	7	20	32	73
1902	384	74	340	77	128	60	212	93	44	55	13	36	31	70
1903	370	70	332	74	121	56	211	92	38	47	12	33	26	58
1904	450	84	391	87	147	67	244	105	59	71	18	49	41	90
1905	437	81	380	83	152	68	228	97	57	68	17	45	40	87
1906	450	82	390	84	146	65	244	103	60	71	24	63	36	77
1907	473	85	415	89	168	74	247	103	58	67	13	33	45	95
1908	449	80	386	82	148	64	238	99	63	72	17	43	46	96
1909	450	79	398	82	142	61	251	103	57	64	19	47	38	78
1910	529	92	474	98	176	74	298	121	55	61	12	30	43	88
1911	526	91	469	96	195	82	274	110	57	63	15	36	42	85
1912	545	93	480	98	177	73	303	121	65	71	19	45	46	92
1913	598	101	510	103	198	81	312	124	88	94	33	78	55	108
1914	595	100	515	103	205	83	310	122	80	85	20	47	60	117
1915	627	104	564	111	235	94	329	128	63	66	28	64	35	67
1916	636	105	550	108	261	104	290	112	85	88	25	57	60	114
1917	640	105	568	110	255	100	313	120	72	74	23	51	49	92
1918	637	103	564	109	234	91	330	126	73	74	29	64	44	82
1919	749	104	660	107	286	93	374	121	89	85	27	56	62	110
1920	827	113	724	116	332	108	392	124	103	95	37	69	66	119

INFLUENCE OF SEX AND RACE

Data are available for calculating the effect of sex and race stock as determined by color on the crude rates for cancer for the twenty-one year period 1900-1920. The results are shown in Table 3. In this period the rates rose for white persons from 64 to 116, and for negroes from 55 to 95. For sex, the increases were: White persons: males, from 46 to 108; females, from 81 to 124; negroes: males, from 23 to 69; females, from 81 to 119. The course of the rates was much smoother for white persons than for negroes. In few years did the rates for negro males approach those for white males. Though there were no great differences between the rates for females of the two races, the rate for whites was almost invariably higher. In no one of these four groups did the rates fail to increase considerably during this period. It is clear not only that, as is commonly the case, high cancer rates are favored by predominance of females over males, but also that these rates must be influenced in a significant degree by variations in the proportion of negroes in the population. Though, as judged by the results of this analysis, the importance to be ascribed to these points is not great, it is of interest that in the earlier years the proportion of negroes to white persons was much greater than at present. Since 1880 there has been a steady and considerable decline in the ratio of negroes to white persons.

The influence of age on mortality from cancer of all organs for sex and race for 1920 is shown in Table 4. Below the twentieth year of age the deaths were few and, owing to the smallness of the figures, the differences in the rates as between white persons and negroes, and males and females, are hardly significant. Even in the third decade of life, the rate for the whole population was only 12. Here the mortality for negroes of both sexes was slightly higher than that for white persons. For the age period 30-39 years, the rates for the whole population were only 43; for white persons 43, and for negroes 55. In both races the rates were decidedly higher among females than among males. In females the risk of dying of cancer in this age period has become significant. Still, in the population as a whole below the fortieth year of age the risk is comparatively small. Of the total deaths from this affection, only 10 per cent. of the whole, 9 per cent. of the white and 16 per cent. of the negro, occurred in this large section of the population. From the fortieth year onward to the eightieth year in white persons and to the sevenieth year in negroes, these rates climb very steadily, to fall slightly during the remainder of life. Among the age group 70-79 years, slightly more than one in every 100 living white persons died of cancer, while in the negro the mortality was less by half. It is noteworthy that, between the twentieth and sixtieth years of life, the mortality was uniformly higher in negroes than in white persons, and that after the sixtieth year this condition is reversed, and by the eighth decade the death rate for white persons is more than double that for negroes. The reason for this is very evident. It lies mainly in the fact that between the thirtieth and the sixtieth years of life the negress has much the highest death rate, and that from the fortieth year the negro man has a much lower rate than either sex of the white race. The tailing off of the total rate for negroes after the seventieth year is due chiefly to decline in mortality among women. It is worthy of note that among white persons in the eighth decade of life the mortality is greater in men than in women, while after the eightieth year conditions are reversed.

INFLUENCE OF AGE

Of the variety of interesting and instructive facts derived from the foregoing analysis, the one of greatest importance for our present purpose is the capital rôle in cancer mortality played by age. If the results of these observations may be applied to the whole period under consideration—and there is nothing in the known history of cancer to forbid—it is obvious that, other things remaining equal, the cancer death rate would have been unfavorably influenced by relative increase in the population of white persons, especially of women, of females of both races, of white persons aged 40 years and over and of negroes between the fortieth and the seventieth years of life.

TABLE 4.—NUMBER OF DEATHS AND RATE OF DEATH PER HUNDRED THOUSAND LIVING INHABITANTS, FROM CANCER, ACCORDING TO AGE, COLOR AND SEX FOR 1920

Age Period	Total Population		White						Colored					
			Total		Male		Female		Total		Male		Female	
	Deaths	Rate	Deaths	Rate	Deaths	Rate	Deaths	Rate	Deaths	Rate	Deaths	Rate	Deaths	Rate
Under 1 year	1	7	1	8	1	15	..	..	..	..	..	..	..	..
Between 2 and 4 years	3	6	2	4	1	4	1	4	1	16	..	..	1	30
5 and 9 years	1	2	1	2	1	4	..	..	..	..	..	..	..	..
0 and 9 years	5	8	4	3	3	5	1	2	1	6	..	..	1	12
10 and 19 years	5	4	5	5	..	..	5	9	..	..	..	..	..	..
20 and 29 years	18	12	14	12	8	14	6	10	4	15	2	16	2	15
30 and 39 years	55	45	43	43	17	34	26	52	12	55	4	36	8	74
40 and 49 years	151	164	120	156	48	126	72	187	31	199	8	97	23	316
50 and 59 years	212	330	180	329	86	322	94	335	32	407	11	259	21	581
60 and 69 years	214	594	198	608	101	660	97	563	16	402	8	467	8	457
70 and 79 years	140	971	134	1026	63	1126	71	952	6	442	3	496	3	399
80 years and over	27	776	26	832	6	534	20	999	1	282	1	746	..	..
Total	827	113	724	116	332	108	392	124	103	95	37	70	66	119

TABLE 5.—NUMBER* OF DEATHS AND RATE OF DEATH PER HUNDRED THOUSAND LIVING INHABITANTS OF THE SEVERAL AGE GROUPS, POPULATION AT ALL AGES, 30 YEARS AND OVER AND 40 YEARS AND OVER, FROM CANCER AND TUMOR AND FROM SENILITY AND CAUSES UNKNOWN IN ADULTS, FOR THE CENSUS YEARS 1830–1920, INCLUSIVE

Census Years	Population at All Ages						Of 30 Years and Over			Of 40 Years and Over								
	Cancer		Tumor		Cancer and Tumor		Cancer Rate	Tumor Rate	Cancer and Tumor Rate	Cancer Rate	Tumor Rate	Cancer and Tumor Rate	Senility		Causes Unknown		Senility and Causes Unknown	
	Deaths	Rate	Deaths	Rate	Deaths	Rate							Deaths	Rate	Deaths	Rate	Deaths	Rate
1830	6	7	1	1	7	9	18	3	21	26	4	31	102	450	43	190	145	640
1840	9	9	3	3	12	12	29	10	39	56	19	75	104	651	32	200	136	851
1850	14	8	3	2	17	10	26	6	32	48	10	59	155	535	94	325	249	860
1860	30	14	4	2	34	16	42	6	47	75	10	85	197	492	144	360	341	852
1870	49	18	8	3	57	21	51	8	60	87	14	101	288	513	141	251	429	764
1880	174	52	34	10	208	63	139	27	167	226	44	270	232	327	14	18	266	345
1890	256	50	25	6	281	65	151	15	166	247	24	271	365	352	6	6	371	358
1900	338	67	35	7	373	73	164	17	181	268	28	296	357	288	...	...	357	283
1910	502	90	27	5	529	95	209	11	220	331	18	349	191	126	...	...	191	126
1920	789	108	27	4	816	111	238	8	246	378	13	391	60	29	...	...	66	29

* In each instance the figures for the number of deaths represent the average of three consecutive years, namely, the census year and the year immediately preceding and succeeding.

The influence of changes in the age distribution of the whole population on the increase in the mortality rates for cancer (and "tumor") may be estimated in several ways. As it has been shown that of the deaths ascribed to cancer only a small proportion occurred in persons below the fortieth year, and an almost negligible proportion in those under the thirtieth year of age, it is permissible, for the sake of an approximate estimate of the influence of changes in the age distribution of the population, to disregard the lower age groups and to consider only that portion of the population above these two ages. Between 1830 and 1920, the percentage of the population of 40 years of age and over increased from 15.7 to 28.5 per cent. of the whole, or by 75 per cent.[1] In the same period the proportion of population 30 years of age and over rose from 29.2 to 54.8 per cent. of the whole, or an increase of 55 per cent. Between 1830 and 1920, therefore, the increase in the proportion of the population in the age period most susceptible to cancer was in a ratio far below that of the recorded increase in cancer mortality. Mortality rates for cancer and tumor for each census year between 1830 and 1920, calculated on the basis of the population at all ages and the populations above the thirtieth and fortieth years of life, respectively, are given in Table 5 and Chart 2. Whatever their specific differences, these rates for the census years follow the same general course throughout. All show an ascent more or less gradual until 1870, with a sharp rise to much higher levels in 1880.

Though some, at least, of the increase in the recorded mortality previous to 1870 may well have been due to an actual increase in the lethal force of tumors, it is inconceivable that the enormous advance in the rates between 1870 and 1880 can be thus explained. The rates for all tumors in 1830 and 1850 did not approach the level which, it will be shown later, the mortality for cancer of the uterus and breast had attained in 1880. The rates recorded for 1870 would hardly have covered the expected mortality from all tumors readily diagnosable at that time. It seems likely, then, that in the period previous to 1870, the diagnosis of tumors, except in the most obvious cases, was, on the whole, poor, and that deaths from this cause were but poorly recorded and classified. By the same token, the enormous increase in the tumor rate for 1880, as compared with that for 1870, must have been due very largely, if not entirely, to improvement in statistical classification of deaths inaugurated after the introduction of death certificates in 1875, under the influence of a

1. The figures for the age distributions of the population here used are those of the United States Census Bureau, from actual counts for the census years 1850, 1860, 1890, 1900, 1910 and 1920, and as graduated by my colleague, Dr. Lowell J. Reed, for 1830, 1840, 1870 and 1880.

commissioner of health, Dr. James Steuart, who, as his reports show, was particularly interested in statistics. This view is supported by the fact that in the rates calculated for the census years, there was no increase in the total rates for cancer and tumor between 1880 and 1890. It has already been pointed out that methods of precision in the diagnosis of internal cancer

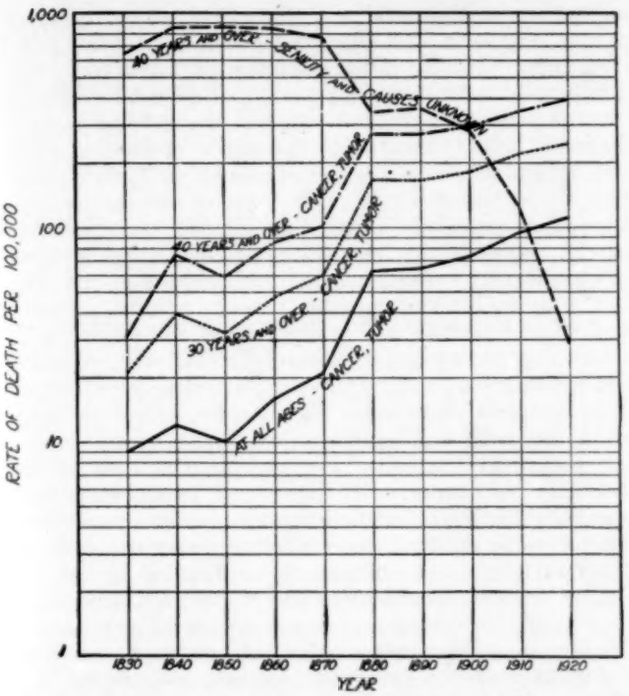


Chart 2.—The rate of death per hundred thousand living inhabitants of the several age groups. Population at all ages, 30 years and over and 40 years and over, from cancer and tumor and from senility and causes unknown in adults, for the census years 1830 to 1920, inclusive.

could have made but little progress in these ten years. If these observations and assumptions are correct, then the course of the rates for tumors (including cancer) does not signify an actual increase in lethal force in the period up to 1890. Since deaths classified under senility certainly and those under causes unknown in adults probably occurred very largely in persons 40 years of age and over, mortality rates for these two rubrics calculated for this age group are presented for comparison in Table 5 and Chart 2. It is evident that there was in these two indefinite rubrics alone ample room for all unclassified deaths from cancer and other tumors, as well as from various other chronic affections that were imperfectly recognized and classified previous to 1880. The close correspondence between the decline in the rates for these two rubrics, and the advance in those for benign and malignant tumors, particularly in the period 1860-1880, is striking. Since between 1880 and 1890 there was practically no increase in the rates, however calculated, further consideration of the course of these affections cover the thirty years since 1890. In this period the rates, however calculated, exhibit a progressive and considerable increase. The percentages of increases in these rates during the different portions of the period are shown in Table 6.

It will be observed that the greater the degree of correction for the age factor, the smaller the percentage of increase in the rates. Even this method must fail to express fully the influence of the age factor on the rates of cancer mortality, for here it is assumed that all increase in the proportional increase in the population above the twenty-ninth and thirty-ninth years of life is of equal consequence in this respect. However, it has been shown in Table 3 that the risk of dying of cancer increases greatly and in rising ratios from decade to decade of life. It is evident, then, that increases in the proportion of the population in the higher decades, the sixth, seventh and eighth, for instance, must exercise a more marked influence on the cancer risk than corresponding increases in the fourth and fifth decades. As a matter of fact, in the period 1890-1920, the proportions of the population in the sixth, seventh and eighth decades of life increased by 21, 26 and 19 per cent., respectively, while the proportional increases for the fourth and fifth decades were only 4 and 16 per cent. So, if it were possible to calculate for each census year rates specific for each of these decades of life, that is, rates more fully specific for age, correction for this factor would have been even more potent in effect. But when death rates for cancer alone specific for age for the census years 1900, 1910 and 1920 are applied to the respective age distribution of a standard population (Glover's Life Table for the United States), a rise in the rate from 105 in 1900 to 173 in 1920, or an increase of 65 per cent., becomes apparent in this twenty-one year period as due to causes other than age influence.

While some of this rise in tumor rates due to causes other than changes in the age distribution is probably ascribable to improvement in statistical classification of deaths, if most of it does not represent an actual increase in mortality, complete explanation is to be sought in other factors. Suffice it here to point out that the known advances in precision in diagnosis and the probable augmentation of the proportion of nonresident deaths would probably cover the deficit. However, it must be acknowledged that up to this point definite proof that mortality from tumors has not really advanced has not been forthcoming. Nor has any offset been allowed for a reduction in mortality that should have occurred, if the surgeons are correct in their assertions that they have wrought definite cures in cancers of certain organs, and have been more successful than formerly in removing benign tumors of particular organs, such as the uterus and ovary, that if left alone must have caused deaths.

TABLE 6.—PERCENTAGE OF INCREASE FROM ONE PERIOD TO ANOTHER OF RATES SHOWN IN TABLE 5

Periods	Population of All Ages	Population 30 Years and Over	Population 40 Years and Over
1890 to 1920	71	49	44
1890 to 1900	12	9	9
1900 to 1910	31	22	15
1910 to 1920	17	12	12
1880 to 1890	3	..	..

EFFECT OF IMPROVEMENTS IN DIAGNOSIS AND IN STATISTICAL CLASSIFICATION

There remains yet another test that may be applied to this material, with some hope of getting a clear-cut answer that will cover these objections so far as cancer is concerned. The diagnosis of cancer of the breast and uterus in lethal stages cannot be justly held to have improved significantly since 1880. However, since 1890 and particularly since 1900, operative technic for their cure has certainly, as the result primarily of the work of Halsted and Kelly and their associates, been greatly perfected, and of late years many other capable

surgeons have adopted like methods. If there has been no actual increase in the mortality from cancer of these two organs, then rates specific for sex and age should show no significant increase between 1880 and 1900, and an actual and not insignificant decrease since the latter date. Rates averaged for five year periods from 1876 to 1920, inclusive, for these two categories in respect of the total female population, that is, rates specific for sex alone, are given in Table 7. Since 1880, the percentages of increase in mortality were, for the breast, 43; for the uterus, 50, and for the two together, 47. It is noteworthy that for cancer of the uterus these

TABLE 7.—RATE OF DEATH, PER HUNDRED THOUSAND LIVING FEMALE INHABITANTS BY FIVE-YEAR PERIODS, FROM CANCER OF THE BREAST, UTERUS, OVARIES AND PELVIS, FROM 1876 TO 1920, INCLUSIVE

Period	Total	Breast	Uterus, Ovaries and Pelvis
1876 to 1880	34	12	22
1881 to 1885	36	14	22
1886 to 1890	42	16	26
1891 to 1895	43	15	28
1896 to 1900	44	14	30
1901 to 1905	40	15	25
1906 to 1910	45	16	30
1911 to 1915	48	18	30
1916 to 1920	53	20	33

rates showed little change between 1895 and 1915, and that those for cancer of the breast were practically stationary from 1880 to 1910. For cancer of the breast since 1910, and for cancer of the uterus since 1915, these rates advanced considerably. As, for practical purposes, deaths from cancer of the breast and uterus may be taken as confined to the age period 40 years and over, and, since 1880, the female population of this age group has contributed but slightly more (between 1 and 2 per cent.) than half the total population 40 years of age and over, it is possible to calculate rates reasonably specific for the actual population exposed to the risk of death from cancer of these organs for the census years 1880 to 1920, inclusive. From these data, presented in Table 8, it appears that after 1880 there was no increase in mortality from cancer of the breast, and since 1890 none from cancer of the uterus. On the contrary, since 1910, there has been a notable decrease in mortality from cancer of the breast, and since 1890 from cancer of the uterus and from cancer of these two organs taken together. Thus, when rates that approach specificity are obtained, in respect to cancer of these two organs, in which the disease in fatal stages is readily diagnosable, an apparent increase in mortality is converted into an actual decrease. Therefore, it seems to be established that, during the last forty years, cancer of the breast and uterus (including the other female organs of generation) has shown no real advance in mortality, and that there is a considerable margin of reduction, especially in respect of the latter category, to be placed to the credit of surgical interference.

As the operative mortality for cancer of these two seats is comparatively slight, the question of deaths among nonresidents is here of negligible importance. In the light of this important disclosure, it seems warranted that such proportions of the advances in the crude rates for cancer of all other organs as are not dependent on changes in the age distribution of the population should be attributed to improvements in diagnosis and statistical classification, and to relative increases in the number of deaths of nonresidents with cancer coming to the city for diagnosis and treatment, and not to an actual increase in mortality.

Since 1890, these specific rates for cancer of the breast and uterus have fallen by 25 and 42 per cent., respectively. As spontaneous recovery of cancer of these organs is unknown, unless the disease has decreased correspondingly in incidence—and for this there is no evidence—these figures may be taken as measuring in a general way the effect on mortality of earlier diagnosis and improved methods of mechanical treatment. If this is the measure of accomplishment amid many difficulties in a period of gradual evolution toward perfection in knowledge of the natural history, diagnosis and treatment of cancerous disease in these two organs in which it is so notoriously malignant, what may not be hoped for from the same or similar methods applied to relatively simpler problems? As, unfortunately, owing to the restrictions of the statistical tabulations, deaths from cancer of such organs as the skin, lips, tongue, bladder, prostate, colon, rectum, stomach and small intestine, for which, under the guidance of advancing knowledge in pathologic anatomy, mechanical measures of the treatment (including irradiation) have in recent years made such strides, cannot be separated out with any exactness into appropriate groups for statistical analysis. For complete studies of the mortality of cancer of these and other important organs, such as the central nervous system, new tabulations made under expert control from the original death certificates are necessary. Until this is done on a large amount of material and the results have been submitted to appropriate critical statistical analysis, no definite knowledge will be had of the true course of the great mass of cancerous disease, and of the real efficacy of treatment. In comparison with the yield in knowledge, the cost would be insignificant.

In the meantime, while it would be unwise to generalize too broadly from the implications of the present analysis of a restricted and isolated material, acknowledged to be not without defects in both diagnosis and classification, yet the indications are that, if it were practicable to investigate the course of cancer mortality for each particular organ or part, even if no more thoroughly than it has here been possible to do for cancer of the breast and uterus, it would be found that cancer is not increasing either in incidence or in mortality among those actually exposed to risk. So far as Baltimore is concerned, the two questions propounded at the beginning of this discussion have been answered in part. While the evidence at hand is insufficient to prove conclusively that there has been no actual increase in the mortality rates from cancer of all organs taken together, at least it renders this doubtful.

TABLE 8.—NUMBER* OF DEATHS AND RATE OF DEATH, PER HUNDRED THOUSAND LIVING FEMALE INHABITANTS 40 YEARS OF AGE AND OVER, FROM CANCER OF THE BREAST AND UTERUS, FOR THE CENSUS YEARS 1880 TO 1920, INCLUSIVE

Year	Total		Breast		Uterus	
	Deaths	Rate	Deaths	Rate	Deaths	Rate
1880	94	61	37	24	57	37
1890	158	76	50	24	108	52
1900	161	64	52	20	109	43
1910	199	65	74	24	125	41
1920	205	48	80	18	125	30

* In each instance the figures for number of deaths represent the average for three consecutive years—the census year and the year immediately preceding and succeeding.

It does show beyond all question of doubt that cancer mortality in Baltimore cannot have increased in anything approaching the degree indicated by the crude rates. For cancer of the only two organs, the breast and the uterus, for which rates approaching specificity could be obtained, it has been shown that in the forty years ending in 1920, mortality has not increased, and that during the latter half of this period there has occurred a gradual but very significant decline in the death rate which, in the absence of other satisfactory explanation, it seems safe to ascribe to medical activities.

625 St. Paul Street.

PRESERVATION OF THE LIFE OF COMPLETELY PARATHYROIDECTOMIZED DOGS

BY MEANS OF THE ORAL ADMINISTRATION OF CALCIUM LACTATE *

ARNO B. LUCKHARDT, M.D.
AND
BENJAMIN GOLDBERG, B.S.
CHICAGO

In several earlier communications [1] it was stated that completely parathyroidectomized animals could be cured of all symptoms of parathyroid tetany by the intravenous injection of Ringer's solution. It was furthermore shown that this treatment could be stopped after from forty to sixty days without the appearance of tetany except under special conditions described in the papers referred to. In the course of this work it was found that calcium-free Ringer's solution or Locke's solution from which the calcium was partly precipitated possessed some efficacy in conserving the life of parathyroidectomized animals, but that ordinary Ringer's solution was incomparably better, especially early after operation.

These results strongly suggested that the calcium contained in the Ringer's solution was in some way responsible for the beneficial results seen following its intravenous administration in parathyroidectomized animals. When, however, calcium chlorid was administered orally in quantities from 2.6 to 3.6 times as great each day as was present in a day's treatment of Ringer's solution intravenously injected, the animal invariably went into severe tetany. These results seemed to indicate that it was not the calcium itself in the Ringer's solution which made it a more efficacious agent, but that ordinary Ringer's solution was a balanced solution. As a balanced solution it might presumably act not only by increasing the rate of urinary excretion but also by effecting a more rapid elimination of the nitrogenous toxin or toxins responsible for the tetany. Aside from these possibilities, we have not overlooked the possibility that the calcium may act by decreasing the permeability of the cells and thus preventing the poisonous material from acting injuriously on the latter.

About this time our attention was directed to an article by Frouin [2] on the efficacy of calcium and magnesium salts in conserving the life of parathyroidectomized dogs when such salts were administered orally. The statements of Frouin were in direct conflict with the experience of a host of physiologists and pharmacologists who had attempted to preserve the life of parathyroidectomized animals by the administration of calcium salts. Whereas the immediate effects of the intravenous administration of calcium salts are astounding, all investigators reported that the animals eventually died in spite of heroic medication with such salts. As late as 1917, Voegtlin [3] himself writes that "the life of such animals cannot be saved by the continued administration of calcium," and that the "oral administration of calcium salts is of doubtful value," i. e., in parathyroidectomized animals.

The administration of large quantities of calcium lactate or calcium chlorid solutions intravenously and in a concentrated form has always seemed to us a highly unphysiologic procedure. On a theoretical basis, it appeared to us absurd that grams of calcium lactate should be introduced daily and directly into the circulation over a period of many days. Whether this position proves to be correct or not, it seemed more reasonable to test out the efficacy of calcium compounds by administering them orally. On the basis of these considerations and the facts reported by Frouin, we decided to reinvestigate the therapeutic properties of calcium lactate in parathyroid tetany by administering this salt orally, in spite of the numerous reports in the literature on the impracticability of the procedure.

METHODS

The dogs used were put on a ration generally admitted to bring on rapidly and severely the fatal symptoms of tetany following the removal of the parathyroids. Each parathyroidectomized dog (the average weight of the dogs being 12 kg.) received daily one-half pound of meat and one-half pound of bread.

The general routine in the administration of the calcium lactate was roughly as follows: We usually gave each dog 10 gm. of calcium lactate dissolved or partly suspended in from 200 to 300 c.c. of cold tap water by stomach tube early in the morning. Several hours later we stirred up in the ground meat and bread 20 gm. of calcium lactate and offered this to the animal. This food was devoured eagerly. Late in the afternoon the animal again received 10 gm. of calcium lactate by stomach tube as in the morning.

In our experimentation we varied the amount of calcium lactate given daily, giving as much as 2.7 gm. per kilogram and as little as 0.43 gm. per kilogram of body weight.

We hope that this short description will suffice to acquaint the reader in a general way with our technic. The precise details will be published later.

RESULTS

In this preliminary publication we are prepared to record the following results:

1. Completely parathyroidectomized dogs can be kept alive without showing tetany on a diet very rich in meat by means of the oral administration of calcium lactate.

2. The daily intake of calcium lactate early after parathyroidectomy must amount to approximately 1.5 gm. per kilogram of body weight. As time goes on, the daily amount of calcium lactate necessary to prevent the appearance of tetany can be reduced.

3. After several months, the administration of calcium lactate can be stopped entirely without the appear-

* From the Hull Physiological Laboratory, University of Chicago.

1. Luckhardt and Rosenbloom: Proc. Soc. Exper. Biol. & Med. **19**: 129, 130, 1921. Luckhardt and Rosenbloom: Science **56**: 48 (July) 1922. Luckhardt and Blumenstock: Science **56**: 257 (Sept.) 1922.

2. Frouin: Compt. rend. Acad. d. sc. **148**: 1622, 1909.

3. Voegtlin: Official Reports of Referate of American Gynecological Society, Pittsburgh, May-June, 1917, pp. 64-78.

ance of tetany. The spontaneous tetany occurring thereafter at irregular intervals, presumably because of constipation or the ingestion of large quantities of unspoiled or small quantities of putrid meat or other spoiled food, can be rapidly controlled by the oral administration of calcium lactate and the giving of enemas.

4. As in previously reported work, all tetany symptoms recur during the estral cycle. This tetany can be controlled perfectly by means of the oral administration of calcium lactate.

5. It is clear that water when given daily by stomach tube in large quantities (1,050 c.c. to a 12 kg. dog) does not prevent the appearance of violent tetany.

6. If, early after parathyroidectomy, the calcium lactate is withdrawn from the diet a single day, the animals will be found in most violent tetany within twenty-four hours or even earlier.

7. Whereas calcium lactate given daily in doses of 1.5 gm. per kilogram prevents absolutely the occurrence of tetany, bone ash given daily in doses as high as 5 gm. per kilogram has no appreciable effect in preventing the onset of very severe tetany. The total amount of calcium in a given amount of bone ash is very much greater than in an equivalent amount by weight of calcium lactate. The latter may be more readily absorbed, however, because of its greater solubility. There are some indications that bone ash given in large quantities possesses some undesirable properties.

8. As a result of muscular exercise and excitement, recently parathyroidectomized dogs on a low calcium intake may show suddenly seizures identical with the convulsize seizures seen in grand mal attacks of idiopathic epilepsy. On the basis of these findings and other data, we have suggested the use of calcium lactate in idiopathic epilepsy in doses approaching those found necessary to prevent tetany in parathyroidectomized animals. This dosage is much higher than that found in the United States Pharmacopeia. If calcium lactate is to be used at all in such conditions, it should be used in what appears at first sight to be massive doses. The large doses used in dogs have never been followed by any untoward symptoms even when given daily over a period of from sixty-four to eighty-one days. Amounts of calcium lactate similar to those given to dogs are not only well borne by epileptics but have been found to ameliorate the epilepsy, though it is too early to make definite statements on the subject.

9. On the basis of this work, we believe that the rôle of calcium lactate in preserving the life of completely parathyroidectomized animals is quite complex. It does not seem probable, at the present writing, that calcium salts act by meeting a deficiency of tissue or blood or lymph calcium on the view held years ago that the tetany after removal of the parathyroids was due to a loss of body calcium (calcium diabetes). We intend to determine at an early date whether the calcium asserts its beneficial action by acting locally on the bowel or its flora, or by or by acting constitutionally after absorption from the intestine. Chemical analyses of the blood and other body fluids will soon be undertaken, in the hope that such studies will help materially in elucidating the rôle of calcium, especially since we now possess several satisfactory methods in rapidly controlling the tetany and keeping the animals alive indefinitely. In earlier studies we were concerned primarily in conserving the life of parathyroidectomized dogs and in determining as far as possible the immediate cause of the distressing symptoms and the heretofore certain death. In addition to our own method, Dragstedt [4] has developed another method, on the basis of even more fundamental considerations, of preventing the death of completely parathyroidectomized animals. With this method and our own methods, it is now possible to study by diverse means the physiologic function of the parathyroid glands by determining the metabolic changes and compensatory readjustments that occur in the body following their removal.

SOME OCULAR PHASES OF LITTLE'S DISEASE (CONGENITAL SPASTIC RIGIDITY OF THE LIMBS)

REPORT OF CASES

WILLIAM CAMPBELL POSEY, M.D.
PHILADELPHIA

In 1861, Little, a British orthopedist, called attention to a condition not infrequently observed in consequence of premature births, mechanical injuries during parturition to the fetal head, etc., in consequence of which convulsions are excited after birth, and are succeeded by a determinate affection of the limbs of the child, which he designated "spastic rigidity of the limbs of new-born children, spastic rigidity from asphyxia neonatorum," and assimilated it to the trismus nascentium and the universal spastic rigidity sometimes produced at later periods of existence. It is manifestly outside the scope of this paper to discuss the general neurologic aspects of this condition, now usually designated as "Little's disease," though it may not be amiss to give a short clinical description of it, to refresh our memory, burdened with so many things ophthalmologic that the symptomatology of some of the rarer neurologic conditions at times escapes us.

According to Oppenheim, whose textbook contains perhaps the best description of the disease,

> Even in cases where the morbid condition must be regarded as congenital, symptoms pointing to involvement of the muscular system are not always recognized directly after birth. If the lesion is a very marked one, it will certainly be early manifested by the difficulty of separating the thighs, which are closely pressed together, and which at once resume the position of adduction. The condition is frequently first recognized when the child begins to attempt to walk, or shortly thereafter. . . . The lower limbs are held stiffly, the thighs rotated inwards, and so strongly adducted that the knees touch each other and in walking rub against each other. This, indeed, may be so very marked that in walking the thighs may cross each other. Whilst the hip and knee-joints are generally but slightly flexed, the pes equinus position is usually very pronounced, so that in walking the heels are raised in the air, and the little patient can only push himself along on the toes or the balls of the toes. . . .
>
> If the patient is examined in the dorsal position, the well-known phenomena of rigidity and motor weakness are observed, but it should be noted that these are not necessarily equally marked; the former may be very severe, whilst the motor power is little affected or even quite normal. Many writers go so far as to include under Little's disease only those cases in which the motor disturbances are due to muscular rigidity and not to weakness. This distinction cannot, however, be sharply adhered to.
>
> The knee jerk is always exaggerated; ankle-clonus is often absent. The patella is usually drawn somewhat upwards,

4. Dragstedt, L. R.: The Pathogenesis of Parathyroid Tetany, J. A. M. A. 79: 1593 (Nov. 4) 1922.

and the patellar ligament appears to be lengthened. This is especially evident when the knee is flexed to an acute angle. Babinski's sign is usually present, but it should be remembered that in very young children dorsal flexion of the toes represents the physiological reflex movement. Oppenheim's sign, as well as the Bechterew-Mendel sign, is not constantly present. In the sitting position the rigidity and the spasm of the extensors are sometimes shown by the fact that the knees can not be fully flexed, the legs remaining poised in the air; sitting may in consequence become quite impossible.

Sensory changes, bladder disturbances, etc., are not present, or appear only in rare atypical cases. The symptoms affect the motor sphere exclusively.

The arms are involved in many cases, but in others are completely spared. If they are affected their attitude is usually a peculiar one. The upper arm is strongly abducted, the forearm flexed, sometimes also pronated, the wrist flexed or extended, the fingers flexed in every joint or in the interphalangeal joints only. This may vary in a few cases, but the attitude is always a forced one, at once revealing to the expert the condition of contracture. Passive movements are difficult, the tendon reflexes are exaggerated, the movements slow, awkward and feeble. The weakness of the arms, however, is not so great as that of the lower extremities. . . .

Deformities of the spinal column sometimes occur, and other anomalies of development may be found.

In pure cases of spastic paresis of the lower, or of all four extremities, Oppenheim points out that the symptoms must correspond completely with those of spastic spinal paralysis, and that there must be no indication of nondevelopment or incomplete development or degeneration of the spinal pyramidal tracts.

In such cases other symptoms, however, are generally present, which at once reveal the cerebral origin of the disease. Among these are ocular symptoms, presently to be mentioned in extenso; also disturbances of speech, the rigidity sometimes involving the muscles of articulation and causing difficulty and indistinctness in speech. The rigidity may be completely of the bulbar type, and in exceptional cases may be combined with difficulty in swallowing. There is one class in which, besides the spastic symptoms, there is only strabismus, or a combination of strabismus and speech affection. In others, several additional symptoms are present. While in many cases the intelligence is unaffected, there is in others weakness of the intellect which may amount to idiocy. Epilepsy may appear shortly after birth or during later life. Choreo-athetotic symptoms may affect all four extremities, but predominate, as a rule, in the upper extremities, and not infrequently appear in the muscles of the face and tongue, forming the symptoms which are earliest recognized. They are frequently confused with chorea.

The ocular symptoms include strabismus, nystagmus, rarely paralysis of the extra-ocular muscles and optic atrophy. Strabismus is the most constant. From his personal observations and a study of the literature, Feer found strabismus in 30 per cent. of cases of Little's disease which were without cerebral complications, and in 40 per cent. in which such was the case.

Although Uhthoff states that these figures are probably somewhat in excess of the actual occurrence of this symptom, in his experience strabismus does occur quite frequently. There is much difference of opinion in regard to the origin of the strabismus. It has been thought in most instances to be merely a concomitant squint due to errors of refraction. A study of the literature, however, will show very marked degrees of ametropia present in so few cases that we can safely assume that in most cases the deviations are dependent on innervational disturbances produced by the disease, and that they vary in degree and kind according to the location and extent of the cerebral lesion. Only rarely is spasticity such as occurs in the extremities present. Uhthoff has noted a periodically striking change in the intensity and even in the degree of the strabismus, and Feer thinks it somewhat oftener alternating than in the ordinary concomitant varieties. Only rarely is the strabismus divergent.

Nystagmus occurs next to strabismus in relative frequency, and varies greatly in degree and in kind. Paralysis of the eye muscles is very rare; so also is optic atrophy. De Bruin saw a case of the latter with normal macula, nystagmus, difficulty in swallowing, marasmus and death. Necropsy revealed a large cyst in the parietal lobe on both sides of the brain. The cunei were trophic, also the thalamus and peripheral optic system. In another, observed by Bruns, cerebral complications were found at the necropsy; i. e., thrombosis of the longitudinal sinus, and old and recent areas of softening in both hemispheres. Feer is inclined, especially when idiocy is also a complication, to regard the internal hydrocephalus present in some cases to be the bond of association between cerebral and optic nerve changes.

Anton and Liebe have also observed cases of optic nerve atrophy. In the light of our present knowledge, Uhthoff thinks that we are not justified in considering lesions of the optic nerve occurring in Little's disease to be analogous to the simple progressive atrophy of tabes, and suggests that the eye symptoms present may be a means of differentiating Little's disease from multiple sclerosis. He also points out that certain cases of amaurotic family idiocy present symptoms not unlike those found in Little's disease.

While it is probable that, in common with my colleagues, I have observed not a few cases presenting ocular symptoms dependent on Little's disease whose origin I failed to recognize, I shall present the notes of three which were diagnosed, and which will illustrate several types of this rather rare affection.

REPORT OF CASES

CASE 1.—Two years ago, by reason of my association with the Home for Incurables in Philadelphia as its consulting ophthalmologist, there was referred to me by Dr. W. W. Watson, the ophthalmologist to the institution, a man, E. D. W., aged 27, who had been an inmate of the home since 15 years of age. According to the statement of Dr. James H. McKee, who attended the mother at his birth, labor was very prolonged, and when toward the end of the second day the fetal heart sounds became weak, forceps were applied and the baby delivered in a pronounced condition of asphyxia pallida, but without a mark. Life was induced only after prolonged artificial respiration. Dr. McKee reports convulsions in the early days and repeated attacks of cyanosis. The child had difficulty in taking the breast, and spasticity developed very early. The left eye began to converge markedly at about 3 years of age. The child talked at 5 years but never entirely clearly, and did not begin to walk until he was 8 years old.

Dr. J. H. W. Rhein, one of the physicians of the home, noted that since the patient could remember, there had been little or no change in his condition outside of that stated in the history. At present there were no facial palsies or cranial nerve palsies; the tongue protruded straight in the median line. There were no atrophies of any of the muscles; the reflexes were generally increased; the chin jerk, the biceps jerk in the arms and the knee jerks were all increased and equal on the two sides. The cremasteric reflex was present, the abdominal reflex absent. Bilateral Babinski, Chaddock and Oppenheim signs were present. The gait was spastic. The patient walked on his toes, the knees interfering. The gait

was associated with a general athetoid condition of the muscles of the face, arms, trunk and legs. When lying recumbent, all the muscles were practically quiet except for an irregular contraction of the toes of both feet. Effort of any sort, speaking or moving any part of the body, gave rise to general athetoid movements of the face, arms, trunk and legs. All the movements were more pronounced on the right side. He practically used the left hand exclusively for voluntary acts. There was some hypertonicity of the muscles of the legs, brought out when the legs were bent at the knees by the examiner. The muscles were generally tense; except for some shortening of the Achilles tendons on both sides, there were no contractures. The sensation was normal everywhere. The finger to nose test brought forth some apparent hypermetry, but this was to be interpreted as an expression of athetosis. There was no adiadokokinesis. Station was normal. There were no subjective pains, no disturbance of the sphincters and no mental defect.

Dr. Watson reported convergent strabismus of the left eye of 40 degrees. The patient fixed well with each eye, but binocular vision was always resumed with the right eye fixing. There was no limitation of movements of either eye, and no nystagmus. There was no apparent spasticity in the movements of the ocular muscles. The eye grounds were negative. Corrected vision was normal in each eye.

The glasses which the patient had worn for several years to correct a moderate amount of hypermetropic astigmatism in each eye having failed to correct some symptoms of eye strain, and the patient being desirous of having his eyes straightened, Dr. Watson brought him to my service at the Howard Hospital, where a double advancement operation was done, under ether, on the external rectus muscles. Although more detailed information will be made of the anomaly at another time, it may be noted that an additional muscle was found in association with the tendon of the left externus. This adventitious tendon was advanced in common with that of the externus. The subsequent progress was uneventful, practical parallelism of the visual axes being obtained without further procedure.

Case 2.—In 1905, there were brought to me girl twins, aged 6 years, in one of whom, M., the mother had noticed soon after birth a tendency of the right eye to diverge, and in the other, A., rather purposeless movements of the eyes. Both were born at the period of seven and a half months in a difficult labor. Both children were noted as being delicate. M. had a skull too long in the anteroposterior diameter and orbits narrower than normal. A., examined at the same time, presented much the same shaped skull and orbits, but no ocular symptoms. When M. was made to fix in the median line, and a screen was placed over the right eye, the right eye deviated directly up under cover, slowly but steadily swinging down again to fix. When the left eye was screened off, the deviation was up, but also in, in the same slow rhythmical fashion as in the right eye. There seemed to be a lagging in the left eye when the object was carried down to the right, and this eye showed a tendency at times to slight convergent strabismus. H. equaled 1.5 D. in each eye. Vision was normal.

My examination having brought on a convulsion, and the child presenting other nervous phenomena, she and her sister were referred to Dr. W. G. Spiller for examination, who reported that both children were delicate, especially A. Both had a somewhat spastic condition of the muscles of the lower part of the face, and a peculiar manner of speaking, as though there might be some spasticity of the muscles of speech. The peculiar turning of the eyeballs upward and inward was very striking in M. She also had exaggeration of the patellar reflexes, and possibly might move the left lower limb a little awkwardly. There was no distinct weakness of the muscles. He believed that both children showed the effects of premature birth, and that the convulsions in M. were such as occur in children occasionally who are born too soon, and that they were brought on by the excitement of undergoing an examination. Both children were nervous, and A. might have convulsions at any time after excitement. He did not believe that any new lesions were developing in M.'s brain. Ocular disturbances are not uncommon in prematurely born children. M. might never have another convulsion, but she might have one at any time. Dr. Spiller advised the parents to keep them much outdoors, to prevent them from studying very hard, to hold back their mental development, and to pay much attention to their general health. These children belonged to the class he wrote about under the heading "Little's Disease."[1]

Other convulsions occurred in M. for a number of years, several of which followed ocular examinations, others being attributed to fatigue or overeating. In one of unusual severity the child was unconscious; the head was turned to the right, and the extremities on one side jerked.

These children reported for examination every two years, and their development has been followed with great interest. At no time have there been any intra-ocular changes, the optic nerves being normal. Although somewhat neurotic, both have developed almost normally, being mentally bright, and physically fairly strong. M.'s ocular condition, which has been regarded as an instance of that rare anomaly of the ocular muscles described by Stevens under the name of anotropia, has remained unchanged. The muscle test is unusual. At 5 meters in the primary position, there is an exophoria of 14 degrees. When the rod is placed before the right eye, the streak of light is below 6 degrees, and when it is transferred to the left eye, the streak is still below, and it requires an 8 degree prism, base down, to bring it up even with the light. Stevens was of the opinion that in these cases there is excess of the upward rotation in each eye, associated with a declination of the meridians, as a consequence of which the simultaneous and synergic action of the superior obliques is suppressed and the superior recti act alone. The occurrence of the anomaly in a subject of Little's disease is not without interest as bearing upon the etiology of this bizarre behavior of the ocular muscles.

Case 3.—In 1908, J. C. T., aged 4 years, was brought to me on account of rolling of the eyes. It was ascertained that he was delivered with instruments at the end of a labor that had lasted forty-eight hours, and that he was asphyxiated in consequence and revived with difficulty. He walked at about 16 months of age; though he never had convulsions, he was a nervous, irritable child. Rolling of the eyeballs was first noticed when the boy was 2½ years old.

The forehead was somewhat protruding and narrow, but the head not badly shaped. In ordinary fixation, the eyes were quiet, but marked lateral nystagmic movements manifested themselves in lateral excursions of the eyeballs, especially toward the left. The aberrant movements were also more marked at the extremities of the up and down movements of the eyes. No other gross deviations in the ocular movements were present, though both eyes were markedly out under cover. The eyegrounds were normal. This case was also referred to Dr. Spiller, who considered it to be an instance of Little's disease. He found no signs of paralysis or other organic disorder outside the nystagmus, which he thought had resulted from the disturbance at birth. He also was of the opinion that it was not improbable that during the asphyxia the cerebellum was especially affected, and that had the disturbance been a little greater, the child would probably have had cerebral diplegia.

This case has been followed up to the present time, the boy reporting once or twice a year for refraction or some slight ocular ailment. At 9 years of age, a tremor of the head appeared, during convalescence from an attack of scarlet fever. This gradually lessened, however, and when he was 14 years old, had entirely disappeared. Owing, perhaps, to his infantile disability but also to the spoiling influences of a petulant mother, the lad has been much hampered in his development, having difficulty in keeping up with his classes, and easily excited and hysterical. The nystagmus still persists. Both eyes are but slightly hypermetropic and astigmatic, but refraction is difficult, and full visual acuity was obtained with lenses only after patient insistence on the part of the oculist. At 5 meters, esophoria equals 8 degrees, and there is a right hyperphoria of 1 degree. There have never been any changes in the eyegrounds.

2049 Chestnut Street.

1. Spiller, W. G.: Univ. Pennsylvania Bull., January, 1905.

ACIDOSIS IN HYPERTHYROIDISM *

RALPH H. MAJOR, M.D.
KANSAS CITY, KAN.

Although the presence of acidosis as a complication of hyperthyroidism, particularly after operation, is mentioned in the literature of thyroid disease, such references have as a rule been very brief and cursory. This complication is referred to by Crile,[1] by Crotti [2] and by Chesky,[3] both of the latter observers describing the acetone breath which is noted at times in patients after operation. However, many of the most recent articles and textbooks fail to mention the occurrence or the treatment of this complication.

A recent experience with cases of acidosis in thyroid disease suggests the desirability of studying more fully such an important complication. A summary of two of these cases is given:

REPORT OF CASES

CASE 1.—A married woman, aged 37, white, entered the Bell Memorial Hospital, University of Kansas, May 11, 1922, complaining of weakness, nervousness and fluttering of the heart. The duration of the symptoms was two months.

Physical examination disclosed evident loss of weight, exophthalmos with a positive von Graefe sign, a diffusely enlarged thyroid, a fine tremor of the fingers, and a moderate tachycardia, the pulse rate varying from 96 to 119. The blood pressure was: systolic, 140; diastolic, 40.

The blood count revealed: red blood cells, 5,900,000; leukocytes, 9,600; hemoglobin (Sahli), 80 per cent. The differential count revealed no abnormalities. The urine was normal. The basal metabolism was 23 per cent. plus.

The patient's thyroid was first treated by roentgen irradiation, and two exposures were given at intervals of four days. The day following the second treatment the patient was nauseated, and the next day began to vomit, complained of great thirst, and was unable to retain anything on her stomach. Her temperature rose from 99 to 100.2 F., and the pulse rate from 100 to 160. She began to hiccup, was very weak, and looked extremely ill. The breath at this time had a distinct acetone odor, and examination of the urine revealed the presence of large quantities of acetone and diacetic acid. The carbon dioxid combining power of the blood plasma was 48 per cent. by volume (Van Slyke method).

Proctoclysis was begun that afternoon, and she received every six hours 500 c.c. of a solution containing 5 per cent. each of sodium bicarbonate and glucose, part of which was expelled. Eighteen hours later, after the patient had received three such injections, she was comfortable, vomiting had ceased, her temperature was 98.6, and the pulse rate was 108. The carbon dioxid combining power of the blood plasma was 60 per cent. by volume, and the urine showed only traces of acetone and diacetic acid. The administration of sodium bicarbonate and glucose was continued for two days.

Two weeks later a lobectomy was performed on this patient under ether anesthesia, by Dr. M. T. Sudler. The pulse rate rose to 136 and the temperature to 101 following the operation, but the next day both were down to normal. The pathologic diagnosis of the tissue removed, by Dr. H. R. Wahl, was: chronic interstitial thyroiditis; focal epithelial hyperplasia of thyroid gland (toxic goiter).

For two days preceding the operation, the patient received 15 grains of sodium bicarbonate daily by mouth; and for three days after operation, she was given glucose and sodium bicarbonate by proctoclysis. No signs or symptoms of acidosis appeared.

The patient was discharged from the hospital, June 26, ten days after operation, markedly improved. She was seen again, September 22, when she had gained 14 pounds (6.4 kg.) and had a normal metabolic rate.

CASE 2.—A married woman, aged 37, white, entered the Bell Memorial Hospital, University of Kansas, Oct. 17, 1922, complaining of nervousness, palpitation of the heart and loss of weight. The duration of symptoms was one year, during which she had lost 40 pounds (18 kg.).

Physical examination revealed a marked exophthalmos, with a positive von Graefe sign, heteronymous diplopia, a diffusely enlarged thyroid with a very loud bruit, and a fine tremor of the fingers. The pulse rate varied from 80 to 100. The blood pressure was: systolic, 145; diastolic, 95.

The blood count revealed: red blood cells, 5,100,000; leukocytes, 6,200; hemoglobin, 89 per cent. (Sahli). The differential count was normal. The urine was normal; the basal metabolic rate was 20 per cent. plus.

The patient improved markedly under rest in bed. Three days after the first estimation of the metabolic rate, a second determination revealed the rate to be only 10 per cent. above normal.

An operation was performed, October 30, and a partial removal of the gland was carried out by Dr. M. T. Sudler under nitrous oxid and oxygen anesthesia. The day following the operation the patient's pulse was 160, the temperature 102.4 and respiration 24. The patient complained of intense thirst, and insisted on drinking a large quantity of water, which was promptly vomited. The breath had an acetone odor, and the urine contained considerable quantities of acetone and diacetic acid. The carbon dioxid combining power of the blood plasma was 21 per cent. by volume.

This patient was placed on the same glucose and sodium bicarbonate treatment by protoclysis. Twenty-four hours later the patient was comfortable, vomiting had ceased, the pulse rate was 110 and the temperature 99.2, and the carbon dioxid combining power of the blood plasma was 46 per cent. by volume. Six days later the carbon dioxid combining power was 51 per cent. by volume.

The patient was discharged from the hospital, November 21, markedly improved, the basal metabolic rate at this time being normal. The pathologic report of the tissue removed, made by Dr. H. R. Wahl, was: "marked epithelial hyperplasia of the thyroid gland, lymphoid infiltration (thyrotoxic goiter)."

COMMENT

Here, then, are two cases of marked acidosis associated with hyperthyroidism of moderate severity, the condition appearing in one instance after roentgen-ray treatment of the gland and, in the other, following a lobectomy performed under nitrous oxid and oxygen anesthesia. Both patients responded promptly to the administration of alkali.

Crile,[1] Austin and Jonas,[4] Morriss,[5] Caldwell and Cleveland,[6] Reimann and Bloom,[7] Cannon,[8] Carter [9] and Rose [10] have called attention to the acidosis that may follow ether anesthesia. Reimann and Bloom noted a fall of the plasma carbon dioxid from 86.2 to 62.7 c.c. in a patient following nitrous oxid and oxygen anesthesia, while Caldwell and Campbell, in a study of this condition, found in fourteen cases an average fall of 2.8 (measured in millimeters of mercury of the alveolar air). Caldwell and Campbell found also that the differences between the changes produced by gas

* From the Department of Internal Medicine, University of Kansas School of Medicine.

1. Crile, G. W.: The Phenomenon of Acidosis and Its Dominating Influence in Surgery, Ann. Surg. **62**: 257, 1915.
2. Crotti, A.: Thyroid and Thymus, 1918, p. 521.
3. Chesky, in Hertzler: Diseases of the Thyroid Gland, 1922, p. 169.
4. Austin, J. H., and Jonas, Leon: Clinical Studies of Acidosis, Am. J. M. Sc. **163**: 220, 1917.
5. Morriss, W. H.: The Prophylaxis of Anesthesia Acidosis, J. A. M. A. **68**: 1391 (May 13) 1917.
6. Caldwell, G. A., and Cleveland, Mather: Observations on the Relation of Acidosis to Anesthesia, Surg., Gynec. & Obst. **25**: 22 (July) 1917.
7. Reimann, S. P., and Bloom, G. H.: The Decreased Plasma Bicarbonate During Anesthesia and Its Cause, J. Biol. Chem. **30**: 211 (Oct.) 1918.
8. Cannon, W. B.: Acidosis in Cases of Shock, Hemorrhage and Gas Infection, J. A. M. A. **70**: 531 (Feb. 23) 1918.
9. Carter, W. S.: The Effect of Ether Anesthesia on the Alkali Reserve, Arch. Int. Med. **26**: 319 (Sept.) 1920.
10. Rose, M. E.: Acidosis in Surgical Anesthesia, Illinois M. J. **41**: 6 (Jan.) 1922.

and ether, ether, gas and oxygen, local anesthetics and chloroform were slight.

In the two patients described, acidosis may have developed in the second instance as a result of anesthesia. In the first, however, it was directly traceable to the thyroid toxicosis. The presence of intense thirst and vomiting in these patients was noteworthy. Crile [1] has called attention to this in his discussion of the relationship of thyroid disease and acidosis, and in another place [11] has pointed out the necessity of maintaining a proper fluid balance. In these patients, intense thirst ceased with the disappearance of the acidosis.

THE HISTORY OF EXPERIMENTAL SCARLET FEVER IN MAN *

LUDVIG HEKTOEN, M.D.
CHICAGO

Most of the attempts to inoculate human beings with scarlet fever have been made, not for the purposes of studying the nature and mode of infection in this disease, but in the hope that a mild attack might result that would protect against further attacks. It was the success of inoculation of smallpox as a protective measure that led to the hope of like success from the inoculation of scarlet fever. Thus, Erasmus Darwin,[1] the grandfather of Charles Darwin, wrote:

> No one could do an act more beneficial to society, or glorious to himself, than by teaching humanity how to inoculate this fatal disease [scarlet fever]; and thus to deprive it of its malignity. Matter might be taken from the ulcers in the throat, which would probably convey the contagion. Or warm water might be put on the eruption, and scraped off again by the edge of a lancet. These experiments could be attended with no danger, and should be tried for the public benefit, and the honor of medical science.

He cites a case, communicated to him by Sir Busick Harwood, professor of anatomy at Cambridge, that would seem

> to shew, as far as a single case can be relied on, that the scarlet fever may be communicated, like the smallpox, by inoculation, and probably with similar success, if the matter be diluted with warm water, used in small quantity, and by superficial incisions only, through the cuticle.
>
> A man with a violent attack of scarlet fever had delirium, and the skin was cracked in many places, exuding an ichorous matter; the attendant was a poor man who recently had cut his hand with a glass bottle, and in the struggle with the patient one evening, this hand frequently came in contact with the patient's body. On the following day the hand was infected and the arm swelled, and on the day after that, scarlet fever set in from which he died in three days.

In another place Darwin says that "the scarlet fever exists with all degrees of virulence, from a flea bite to the plague."

An argument in favor of inoculation of scarlet fever was made by Struve,[2] which is repeated and elaborated by Most,[3] who died of cholera in 1832. Struve held that the surest means of prevention is to destroy the receptivity by an attack of the disease itself, and emphasized the success said to have been obtained by inoculation of measles and pest. He goes on to say that in all probability inoculation of scarlet fever would accomplish just as much as the inoculation of smallpox did before vaccination was introduced; but, as inoculation with scarlet fever probably would be accompanied with dangers of the same kind as those of inoculation of smallpox, vaccination clearly is desirable with blood, saliva, scales or material from ulcers in the throat of scarlet fever patients. Care must be taken to prevent the natural transmission of the disease. Most did not believe that vaccination against scarlet fever would be found in materia medica, although belladonna lessens susceptibility. If there exists in nature any agent that can prevent scarlet fever, it must be looked for in the animal economy. As two contagious principles cannot exist in the body at the same time, because when already infected with one virus it loses its receptivity to all other viruses of similar nature, a permanent preservative against scarlet fever might be obtained from swine suffering from a disease marked by swelling of the neck, by angina, and by erysipelatous inflammation of the surface of the body. Jenner's vaccination led others also to suggest animal diseases as possible sources of vaccines against scarlet fever.

If case inoculation was practiced, Most thought that it should be made during the season when scarlet fever is mild, preferably in January and February; only children between 2 and 7 years of age should be inoculated, not younger ones, because they are insusceptible, and not the older, because they are highly susceptible; the matter inoculated should be taken from a patient free from other disease and suffering with a mild attack of scarlet fever; the best material probably would be blood; and it would be best to inoculate it into the arms by means of punctures or scarifications; material from ulcers in the throat, as recommended by Darwin, should not be used, as likely to be mixed with decomposing matter. After inoculation, children should be placed on light diet and kept in rooms with an even temperature.

Neither Struve nor Most cites any actual cases of inoculation of scarlet fever. Before long, however, attempts were made to produce scarlet fever by inoculation with material from erythematous areas, with serum of miliary vesicles, and with scales of the skin. Experiments of this kind were made by Stoll, Miquel and others, but it is doubtful whether scarlet fever was produced in a single case, although contemporary and later writers appear to have regarded some of the results obtained as positive. Stoll is quoted repeatedly as having produced scarlet fever by inoculation of scales, but I have been unable to find his original article.

Rostan [4] writes: "The eruption appears at a certain time after the application of the cause, seven days, when inoculation has taken place," but he gives no facts to support this statement. He says, further, that scarlatina is an acute exanthem, contagious, which develops under the influence of a specific cause, susceptible of inoculation.

The experiments of Miquel,[5] Bretonneau's pupil and follower, "an humble pioneer," as he calls himself, are mentioned frequently. Belladonna having failed to protect against scarlet fever, Miquel in 1833 included

11. Crile, G. W.: The Protection of the Patient in Surgery of the Thyroid, Surg., Gynec. & Obst. **32**: 213 (March) 1921.

* From the John McCormick Institute for Infectious Diseases.

1. Darwin, Erasmus: Zoonomia **2**: 246, 1796.
2. Struve, Christian August: Untersuchungen und Erfahrungen über die Scharlachkrankheit, 1802, p. 267.
3. Most, George Friedrich: Versuch einer kritischen Bearbeitung der Geschichte des Schalachfiebers und seiner Epidemien von den Aeltesten bis auf unsere Zeiten **2**: 57, 1826.
4. Rostan, Léon: Cours de médecine clinique **2**: 186, 1830.
5. Miquel, J.-F., à Tours, et autrefois d'Amboise: Lettres médicales d'un vétéran de l'école de Bretonneau a M. le professeur Trousseau et autres pour mettre un terme a des erreurs professés sur les maladies eruptives et la spécificité, 1867, p. 138; Schmidt's Jahrb. **3**: 373, 1835.

this disease in experiments to localize by inoculation contagious diseases which he believed were propagated by inhalation. These appear to be the first definite attempt to inoculate scarlet fever. Material was obtained by scratching papules on the skin of a patient with scarlet fever on the third day, which material appeared like yellowish fluid; it was dried on lancets; he then inoculated this material into the arm of a girl, aged 28 months, by means of nine punctures; thirty hours later, zones of redness had appeared around the punctures, which remained for two or three days and disappeared on the fifth day; fifteen days later the same girl was inoculated again with other material of the same nature, but from a different source, and at this time no redness developed. He then inoculated in the same way two other children, one aged 1½ years and one aged 9. Local redness developed as before; the children were now made to sleep with their sister, who had scarlet fever, but they did not become sick. Other experiments were made by Miquel and by Bridel.[6] The results have been variously interpreted, some holding that the inoculated children were protected, others, notably Leroy,[7] who repeated the experiments on himself with tears, blood and scales, declaring that no protection resulted.

Petit Radel [8] is said to have obtained negative results from inserting scales of skin, and Albers [9] says that inoculations with the blood of patients with scarlet fever were without any results in two cases.

About this time, Robert Williams,[10] who held that after an attack of scarlet fever "the susceptibility of the constitution is exhausted to all future attacks of the poison," wrote:

> The contagious nature of scarlet fever has been strictly demonstrated by inoculation. The eruption of scarlet fever is sometimes intermingled with vesicles containing serum. This serum has been used by Sir Busick Harwood and other physicians to inoculate healthy children, in the hope that by this method a milder disease, as in the case of smallpox, might be produced. Scarlet fever has in many instances resulted from this experiment, but the disease has been as formidable as that which occurs spontaneously, and consequently this practice has of late years not been repeated.

Williams fails, however, to refer to any exact reports by Harwood or others and, like Murchison,[11] the only account of Harwood's observation I have found is in Erasmus Darwin's Zoonomia,[1] as stated. Practically the same statement as this by Williams, but also without any definite authority, is made by Copeland:[12]

> The propagation of the disease by inoculation and by contact of the morbid secretions of the disease has been demonstrated. Sir B. Harwood and others have tried to inoculate healthy children with the fluid from vesicles sometimes intermingled with the eruption of scarlatina in hopes of producing a milder disease, as in smallpox; but although the disease was thus communicated in many instances, no mitigation of its type was thereby obtained. In a case which came under my care, the disease was produced by the contact of a small portion of the discharge from the throat of a person with malignant anginous scarlatina, and the patient thus infected had the disease in the most severe form, and recovered with difficulty.

6. Bridel, quoted by Miquel: Lettres, p. 143.
7. Leroy, Raoul: Etude sur le traitement prophylactique de la scarlatine par la belladonna et par l'inoculation, Gaz. hebd. **5**: 314, 1858; Schmidt's Jahrb. **99**: 57, 1858.
8. Cited by Noirot, M. L.: Histoire de la scarlatina, 1847. Guersant: J. f. Kkr. **3**: 42; Encycl. d. med. Wiss. **10**: 440, 1833.
9. Albers, J. F. H.: Das Uebermpfen der Masern, J. de Chir. u. Augenh. **21**: 541, 1834.
10. Williams, Robert: Elements of Medicine **1**: 118, 1836.
11. Murchison: Scarlet Fever, Lancet, 1864, p. 541.
12. Copeland, James: Dictionary of Practical Medicine **3**: 747, 1860.

ACCIDENTAL INOCULATION OF SCARLET FEVER WITH SMALLPOX VACCINE

On account of its bearing on experimental scarlet fever, the accidental inoculation of this disease with smallpox vaccine, described by Salmon Hudson,[13] is given in full:

> That scarlatina is not only contagious, but actually infectious, capable of being transmitted by inoculation, we have the most positive and conclusive evidence, which will be shown by the narration of the following facts:
>
> In the winter of 1854, smallpox made its appearance in Medina village, the county seat of Medina County, Ohio. This, as usual in small places, created no little excitement; everybody wished to be vaccinated. Vaccine matter was obtained, and the physicians were kept busy, myself with the rest. Mr. G. S., a prominent man in our township, sent for me to come and see him; said he had been exposed to the smallpox, and thought he had got it. When I saw him he had a high fever, quick pulse, headache; complained of pains all over his body; said he wished me to vaccinate all of his family, which I accordingly did. Saw Mr. S. the next day; found his body well covered with a rash, sore throat, and every symptom characterizing a plain case of scarlatina; salivary glands were discharging freely, which he attributed to the administration of calomel, of which he had not received one grain. I attended Mr. S. four or five consecutive days, and then dismissed him; telling his wife to save me the scabs from the arms of her two little boys, which she promised to do. In about three weeks, I received an envelop, containing two very nice scabs, of which I was very choice, and the next day vaccinated some thirty children from those scabs, twenty-three of which were taken down simultaneously with scarlatina during the fifth and sixth days after being vaccinated. I was recalled to see them, and, of course had business a plenty; was called everything but a gentleman, censured without mercy, threatened with a prosecution, and escaped the expense of a defense in court by the intervention of my friends.
>
> The history of those scabs with which I vaccinated my patients, is this: Those little boys of Mr. S., after I vaccinated them, came down with scarlatina, though light, after which their vaccination operated effectually; vaccinia being for a time suspended during the invasion and termination of scarlatina, and then developing itself in the system, corroborating an old established principle that, as a general thing, the human system does not tolerate the invasion and development of two specific diseases at the same time.
>
> The little boys contracted scarlatina from their father after being vaccinated, and not being much sick I was not called; and was not even aware that they had had scarlatina at all, or I should never have used the matter from their arms. But this did not exonerate me from censure. "I did it on purpose to make business," "deserved to be put through," as they termed it. Madam Rumor, as she always is, was busy; epithets without number were heaped upon my head; which of course had a tendency to injure me in my business.
>
> And next as to the history of those cases which contracted scarlatina by inoculation from those scabs, which will be interesting as well as instructive. During the fifth and sixth days after I vaccinated them, twenty-three out of the thirty were taken down simultaneously with scarlatina, all of which did well; no unpleasant symptoms, such as retrocession of the rash, metastasis, or abscesses about the neck, but all terminated pleasantly within ten or twelve days from the time I vaccinated them. But no sooner had scarlatina subsided than vaccinia began to assert its prerogative; a nice little pustule began to form on the arm, and all the symptoms attending this disease became manifest, and occurred in every case that had scarlatina.

13. Extracts from Medical Thesis on Inoculation for Scarlatina, by Salmon Hudson of Whittlesey, Ohio M. & S. J. **14**: 190, 1862. Dr. Hudson's thesis was submitted to the faculty of the Starling Medical College at Columbus, Ohio, in 1862, in fulfilment of regular requirements for graduation. The late Dr. Starling Loving informed me in 1905 that the copy of the thesis had been lost. I have been unable to obtain any other details in regard to Dr. Hudson's observations.

Another important feature in those cases was that in several of the families whose children were vaccinated, some were absent. One, in particular, two little boys and a girl; the former two not being home, the matter was only put in the arm of the girl, who came down with scarlatina as the rest; had it very mild, from which her two little brothers contracted the disease in the most malignant form of which both finally died. In several other families the results were very similar; those who were vaccinated had it very mild and light, while those who took it in the natural way had it in the most malignant form, several of whom died.

Now, from the above it strikes me that scarlatina, like smallpox, may be modified and cut short—made less formidable—and, in those fearful epidemcs which so frequently destroy so many of our children, its progress may be arrested, its symptoms mitigated, and the disease shorn of its terrors.

Now as to the practicability, I would suggest that in one of these fearful epidemics I would immediately procure some vaccine matter, put it in the arm of some person just exposed, or coming down with scarlatina. As soon as the patient has had scarlatina, vaccinia will come on, provided the patient has never been vaccinated before. In this manner I have no doubt but the disease may be essentially modified—rendered comparatively safe and harmless.

The fact that twenty-three of the thirty children vaccinated with the same vaccine matter were taken down "simultaneously" with scarlet fever points to a common source of infection, and one cannot but regret that Hudson did not describe the symptoms more in detail. Definite information as to the relation of the rash to the point of vaccination would have been of the greatest value because in so-called surgical scarlet fever, which is the result of an involuntary inoculation, the exanthem may spread first from the wound as described so well in the classical instance of von Leube,[14] who writes:

I have surely had a very slight tendency to scarlatina, since neither as a child, when several of my brothers and sisters were ill of the disease, was I attacked, nor later on, in my treatment of my patients. One day I wounded the index-finger of my left hand during the autopsy upon the cadaver of a patient that had died of an unusually severe case of scarlatina. On the seventh day, after the injury to my finger the wound, which had only imperfectly healed, began to pain. Then early in the tenth day I became unwell and angina appeared. On the eleventh day vomiting, and a decided fever followed, and at the end of the same day the scarlatina exanthem appeared. This, contrary to the usual procedure, spread first from the original lesion, following the lymphatic vessels up to the left arm, in the form of a broad stripe, and then rapidly extended over the rest of my body. The course of the disease was one of medium severity; the desquamation began also upon my left arm.

In considering the inoculation of measles, Thompson[15] makes the following statement about the transmission of scarlet fever in smallpox vaccine:

As regards scarlatina, I may adduce an observation which Dr. Stirton made some time ago. A child whom he had vaccinated showed an eruption of scarlatina the day after he had taken lymph from it, with which he had vaccinated two other children. About the eighth day there appeared an eruption like erysipelas spreading from the vaccine vesicles, not like the ordinary areola, which he attributed to the inoculation of the virus of scarlatina along with that of vaccinia. He was then further confirmed in this opinion by the insusceptibility manifested by these two children to scarlatina on a subsequent occasion.

14. Von Leube, W.: Specialle Diagnose der inneren Krankheiten **2**: 364, 1893.
15. Thompson, Hugh: Inoculation, with Suggestions for Its Further Application in Medicine, Especially in Mitigating the Severity of Measles, Glasgow M. J. **33**: 420, 1890.

FURTHER HUMAN EXPERIMENTS WITH SCARLET FEVER

Continuing the review of the work on experimental human scarlatina, there is nothing conclusive in Ashmead's[16] report that, three days after the inoculation into the skin with scales from a patient on the twenty-fifth day of scarlet fever, redness developed, followed eventually by suppuration and acute tonsillitis without fever or desquamation.

Stickler[17] reported that he produced scarlet fever in ten children by inoculating the skin of the arm with mucus from the throat and mouth of a patient who had a mild attack of the disease. The material was secured soon after the eruption had appeared, and before its use it "was treated with carbolic acid, according to the suggestion of Chamberland and Roux, the addition of 1/600 part of the acid being made." This article was published posthumously, it having been found among Dr. Stickler's papers with the note that "the inoculations were made to prove that a protective virus had been discovered," but, as what was regarded as scarlet fever developed, other experiments were planned to secure protection. It is stated that scarlet fever developed in each of the ten persons, all of whom recovered. In several of the cases the eruption at first seemed more marked at the point of injection; in three cases this became the seat of abscess. In one case nephritis developed. The incubation varied from twelve to seventy-two hours. In at least four of the inoculations the material inoculated must have been kept for about eight days. There is no further statement as to the circumstances under which it was kept. In view of the lack of details in regard to the symptoms in the inoculated children as well as for other reasons, Stickler's results must be set aside as doubtful.

The most recent attempts to produce scarlet fever in man experimentally are by Takahashi[18] and by G. F. and G. H. Dick.[19] Takahashi injected his five children, aged from 3 to 10, with the blood of a patient with scarlet fever on the sixth day. The blood was diluted in physiologic sodium chlorid solution with sodium citrate so that 1 c.c. contained 0.0001 c.c. of blood, and of this mixture four children received 1 c.c. subcutaneously and one, a 3-year-old boy, the youngest, 0.5 c.c. No symptoms whatever developed, and several weeks after his injection three of the children were injected with 0.15 c.c. and one, the youngest, with 0.06 c.c. of blood from a scarlet fever patient on the fifth day of a severe attack. In no case did any symptoms develop after the second inoculation. Furthermore, smearing the throats of two of the inoculated children with a mixture of the throat secretions and blood of a scarlet fever patient on the fourth day of the disease was also without any apparent effect. Takahashi is inclined to conclude that this experiment "proved the efficiency of the prophylactic inoculation against scarlet fever," but in the absence of convincingly positive human control experiments the true significance of these experiments is not now determinable.

The largest series of inoculations to produce scarlet fever in man is that of the Dicks.[19] Healthy men and women volunteers between the ages of 18 and 35,

16. Ashmead, A. S.: Inoculation of a Japanese with Scarlet Fever Germs, M. Rec. **40**: 270, 1891.
17. Stickler, J. W.: Scarlet Fever Reproduced by Inoculation: Some Important Points Deduced Therefrom, M. Rec. **56**: 363, 1899.
18. Takahashi, I.: Prophylactic Inoculation in Human Against Scarlet Fever, Japan M. World **1**: 4 (June) 1921.
19. Dick, G. F., and Dick, Gladys H.: Experimental Inoculations in Scarlet Fever, J. A. M. A. **77**: 782 (Sept. 3) 1921.

living in Chicago and without any history of scarlet fever, were inoculated in various ways: The blood serum of scarlet fever patients was swabbed on the tonsils and injected subcutaneously without any effect; whole citrated blood from scarlet fever patients was injected subcutaneously without effect; the filtered (Maasen or Berkefeld) throat secretion of early scarlet fever was swabbed over the tonsils and pharynx, used as a gargle and injected subcutaneously without effect; cultures of hemolytic streptococci from the throats of scarlet fever patients were smeared on the throats of thirty volunteers, seven of whom developed sore throat, leukocytosis and fever, but no rash, the others remaining perfectly well; finally, nine inoculations by means of throat swabs were made with the pure cultures of a pleomorphic bacterium obtained from the throat, blood and urine in the early stages of scarlet fever, and in two instances sore throat with fever, leukocytosis and a rash on the palate, but no cutaneous eruptions developed. The fact that no case of typical scarlet fever was produced in these extensive experiments naturally raises the question which the future may solve whether the results would have been different if the volunteers had come from rural communities.

CONCLUSION

This brief review of the recorded attempts to produce scarlet fever experimentally in man reveals that it is exceedingly doubtful whether a single positive result has been obtained. In view of the ease with which scarlet fever appears to be transmitted under natural conditions and the not infrequent occurrence of surgical scarlet fever, the failure of the efforts at experimental transmission is a perplexing puzzle that awaits solution.

ISOLATED DISEASE OF THE SCAPHOID

BARCLAY W. MOFFAT, M.D.
NEW YORK

Since Köhler[1] described the first case of isolated disease of the scaphoid in 1908, forty-two cases have been reported. The disease is of more frequent occurrence than this figure would indicate, however, but is diagnosed weak foot, since it occurs in abducted feet, with mild symptoms which clear up on immobilization. Its importance lies in the fact that it has been mistaken for tuberculous disease. Unfortunately, no reports of the pathology so found have been published.

Our knowledge of its pathology is limited to what can be surmised from roentgenograms and the clinical picture. By roentgen ray, the scaphoid is seen as a disk, from one-third to one-fourth normal in size, biconcave, or of irregular density, or opaque. The picture, of course, varies with the stage of the disease.

However, the space occupied by the bone is undiminished, and there is no derangement of the other bones, such as would occur in a crush fracture. Schultze[2] reported a compression fracture produced on a cadaver which gave this picture by roentgen ray.

The suggested etiology has ranged from endocrine imbalance to osteomyelitis, including syphilis, infectious disease, vascular change and tuberculosis. Except for one patient of Köhler's and five patients of Schultze's who had family histories of tuberculosis, evidences of this disease have been lacking in the literature. In only three cases has an infectious disease preceded the onset by a short interval. Not only has the Wassermann reaction been negative as a rule, but other evidences of syphilis have been wanting. One patient of Campbell's had notched teeth, and its mother had a four plus Wassermann reaction.

Trauma appears most consistently in the histories as a possible factor. By seven reporters, it is assigned as the cause and preceded the onset by a period varying from several days to a year. It has never been of sufficient severity to be the direct and only cause of what seems by roentgen ray to be an extensive structural change. One writer[3] believes that trauma injures the center of ossification. Another supposes that nutrient vessels may have been torn off. Still another[4] assigns to trauma a dystrophy which softens the bone, later allowing collapse under weight-bearing.

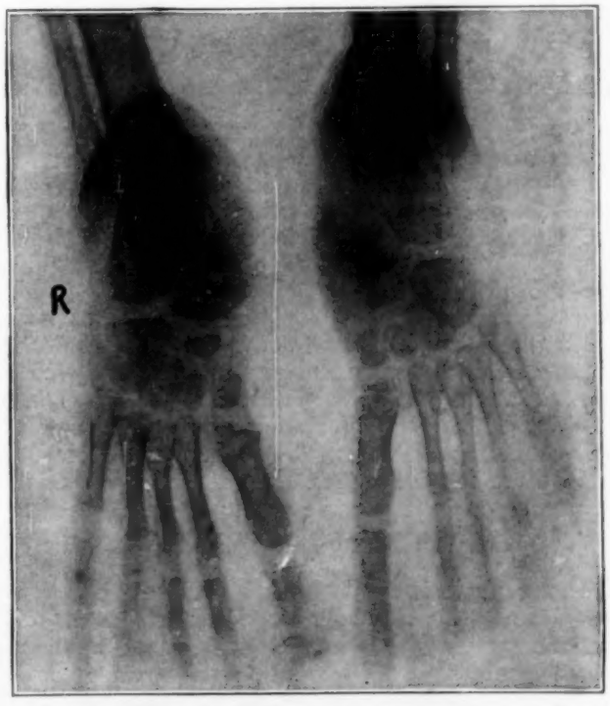


Fig. 1 (Case 1).—On admission: beginning compression of scaphoid; note abduction of forefoot on affected side.

The clinical picture is that of a child of from 4 to 8 years, giving a history of trauma varying from a turned ankle to a crushing injury beneath an automobile. The symptoms, which are occasionally entirely absent, are a slight limp, and discomfort at the site of the scaphoid, increasing often to actual pain at night. The signs, which are also inconstant, are enlargement of the scaphoid, as shown by palpation, and tenderness. Abscess formation never occurs.

The treatment is rest or immobilization in plaster for from three to ten weeks. The prognosis is excellent. I examined, through the kindness of H. L. Taylor, all the patients on the second division at the

1. Köhler, Alban: Ueber einer Haufige, bisher anscheinend unbekannte Erkrankung einzelener Kindlicher Knochen, München. med. Wchnschr., Sept. 15, 1908, p. 1922.
2. Schultze, Ernest: Das Alb. Köhler'sche Knochenbild des Os Naviculare pedis bei Kindern—eine Fraktur, Arch. f. klin. Chir. **100**: 431-452, 1913.
3. Preiser, George: Zur Frage der typischen traumatischen Ernährungsstörungen der kurzen Hand- und Fusswurzelknochen, Fortschr. a. d. geb. d. Röntgenstrahlen **17**: 360-363, 1911.
4. Mouchet, Albert, and Roderer, Carle: La scaphoidité tarsienne des jeunes enfants, Rev. d'orthop. **7**: 302 (July) 1920.

Hospital for Ruptured and Crippled whose symptoms had subsided not less than a year before. No abnormality was discovered in these six cases, three of which I have already reported,[5] nor could the affected side be distinguished from the other by roentgen ray.

In three of the four new cases reported below, serial roentgenograms were taken at three-week intervals. In one of these cases, through the courtesy of the roentgenographer to the Kings County Hospital, I saw the roentgenogram taken immediately following the injury to which the disease was traced. This revealed a foot normal in every respect, thus ruling out a direct compression fracture as the cause of its appearance in the roentgenogram. The serial pictures showed ossification to be progressing as in the normal foot. The bony architecture was normal about the opaque disk as a nucleus. This disk was obliterated in from three to nine weeks. It seems, therefore, that there was no injury to the center of ossification, and that no disturbance of the vascular supply had taken place.

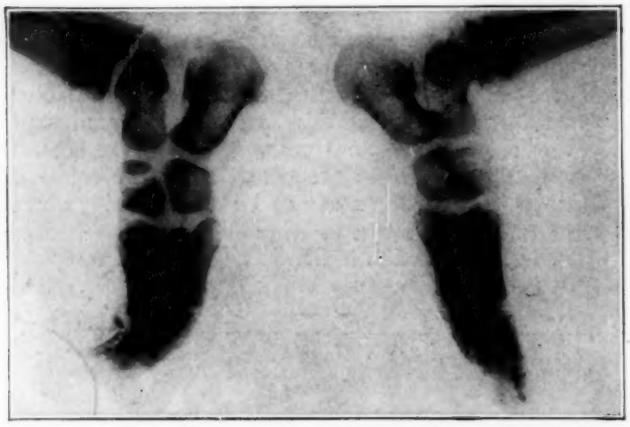


Fig. 2 (Case 1).—Two months later: compression complete with progress of ossification continuing; note white line indicating opaque disk through center of bone.

The scaphoid is cartilaginous up to about 4 years of age, when ossification commences. It is near this age that the disease is found. A mechanism of the disease which would seem to account for all the facts is the following: Through trauma, or possibly some unknown factor, the bone is enlarged. This is demonstrable by palpation and would also account for the abduction of the fore part of the foot found in these cases. In weight-bearing, this enlarged bone, as the keystone of the arch, is subjected to anteroposterior pressure, resulting in a flattening and spreading out laterally of the soft, newly formed osseous portion. The biconcave appearance presented would thus be accounted for. As the constituents of the bone—cartilage and osseous material—are still present, conversion of cartilage into bone continues as in the normal bone. The subsidence of the symptoms corresponds in time roughly to the reestablishment of bony architecture throughout all of the portion visible by the roentgen ray.

REPORT OF CASES

CASE 1.—H. M., aged 7 years, came to the dispensary of the Hospital for Ruptured and Crippled, Second Division, June 29, 1921, complaining of a limp, developing two weeks previously. The family history was negative throughout. The child had always been well. There was no history of trauma. Pain was present ony at night. The mother said that she had been told the boy had fallen arches. The general condition was good. The patient walked with a limp, the legs rotating inward. On standing, the feet were in a position of marked abduction and eversion. There was a prominence at the site of the left scaphoid, which was tender on pressure. No redness or other sign of inflammation was noted; and there were no stigmas of syphilis. As Case 2 (reported below) was under treatment at the time, this case was given mixed treatment, in order to compare the progress of the two. The foot was immobilized in plaster of Paris. Roentgenograms taken immediately and thereafter at three-week intervals revealed normal progress of ossification with final restoration of the bony architecture at the site of the opaque disk first seen.

August 8: The plaster-of-Paris cast was discarded. The tenderness of the left scaphoid was gone. The patient was advised to use the foot.

August 22: There had been no recurrence of symptoms. The patient was discharged.

CASE 2.—T. T., aged 6 years, came to the dispensary of the Hospital for Ruptured and Crippled, Second Division, May 27, 1921, with a complaint of limp. The family and past history was negative. There was insignificant pain, occurring only occasionally, more frequently at night. Symptoms dated back to March 6, when the patient was run over by a truck, the wheel passing over his right foot. He was removed to a hospital, where the foot and hip were examined by roentgen ray. He was then sent home, and remained in bed under a physician's care. At this time, there was pain, swelling and disability, lasting four days. He remained in bed six weeks, however, because of a limp, which had persisted to date. The general condition was good. The patient walked with a slight limp on the right. The foot was in moderate abduction and eversion; the scaphoid was enlarged, but not tender, and there was no redness. All motions were free. The teeth showed microdontia, with spaced incisors, but no definite signs of syphilis, and there were no other stigmas of syphilis. The foot was examined by roentgen ray and immobilized in plaster of Paris. The roentgenogram was typical of isolated disease of the scaphoid. The roentgenogram taken immediately after the accident was negative. Roentgenograms taken at three-week intervals revealed a process similar to those observed in Case 1.

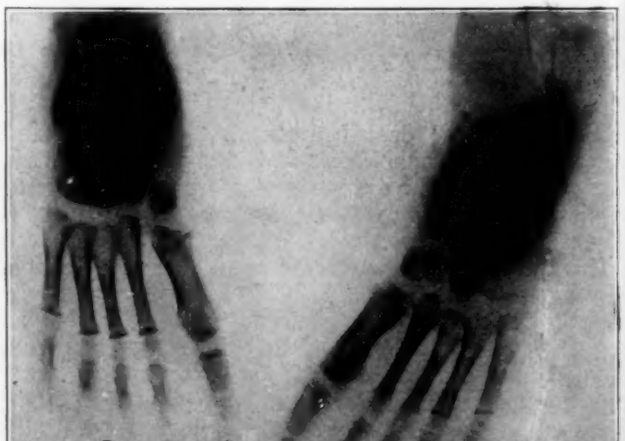


Fig. 3 (Case 1).—One year later: Scaphoid is normal in architecture, but ossification has not yet overtaken that on normal side.

July 6: The plaster of Paris was removed. Slight prominence of the scaphoid remained. The plaster was discarded and use of the foot advised.

5. Moffat, Barclay: Three Cases of Isolated Disease of the Scaphoid, Tr. New York Acad. Med., Orthop. Sec., Jan. 21, 1921.

July 27: As the patient reported that the limp had disappeared and there was no further pain, he was discharged.

CASE 3.—A. B., aged 7 years, came to the dispensary of the Hospital for Ruptured and Crippled, First Division (service of Dr. Wallace, through whose courtesy the case is reported), Dec. 8, 1921. The family history was negative. In July, the boy jumped from a height of 2 feet, following which there was swelling and disability of the left foot, confining him to his bed for four days. No symptoms were noted after four weeks. Onset of pain and disability in the left foot occurred three days before while the boy was playing in the snow. The feet were moderately abducted and everted, with tenderness and swelling at the site of the scaphoid on the left. Examination by roentgen ray revealed a typical lesion of Köhler's disease, and serial roentgenograms revealed that the progress of the disease was similar to that in the two previous cases. The foot was immobilized in plaster.

Jan. 10, 1922: The plaster was removed. There were no further symptoms. The patient was encouraged to walk.

February 21: As there had been no recurrence of symptoms, the patient was discharged.

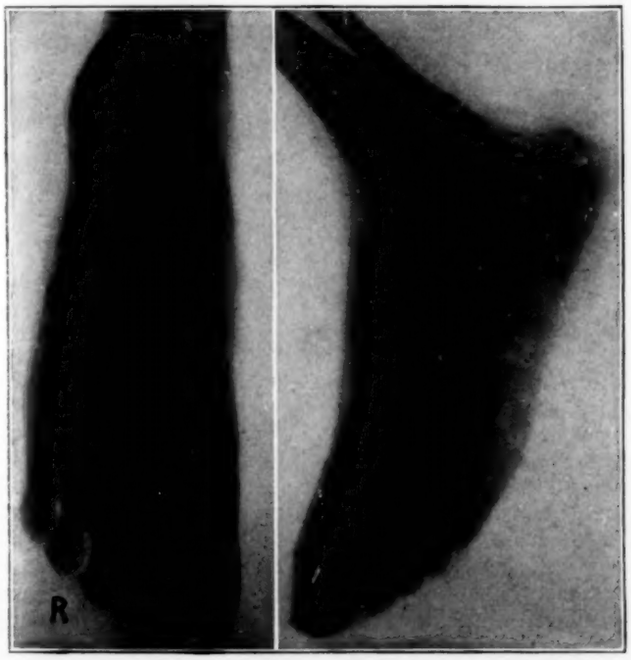


Fig. 4 (Case 4).—On admission: specific process in external cuneiform and cuboid; scaphoid compressed.

CASE 4.—W. R., aged 7 years, was admitted, Jan. 17, 1922, to the dispensary of the Hospital for Ruptured and Crippled, Second Division, complaining of swelling and limp in the right foot. The family and past history was negative. Onset occurred three months before, with generalized swelling of the right foot, and limp. Two months before, there was localized swelling on the dorsum of the foot, which was tender to touch and which had remained stationary since. There was no history of trauma. The patient walked with difficulty and was unable fully to extend the left arm. The angle of greatest extension was 135 degrees; the angle of greatest flexion, 60. There was some enlargement and tenderness about the left elbow joint. The right foot was swollen in the region of the tarsus. There was tenderness on manipulation and pressure. The function of the ankle was not impaired. Right calf, 6½; left calf, 7¼. The patient had been admitted for specific treatment. He received three doses of neo-arsphenamin, under which he showed improvement.

February 3: The patient was discharged to the outpatient department.

March 15: The patient was readmitted because of fluctuant swelling over the dorsum of the right foot. The left elbow was swollen, and was tender on manipulation. There was marked limitation of motion. The forearm was held at 135 degrees and in pronation. A posterior elbow splint was applied, and arsphenamin was given.

March 16: The abscess was incised.

March 31: The patient discharged to the outpatient department. The wound was unhealed.

June 21: Readmission: The child had been under treatment in the dispensary for several months for the ulcer on the dorsum of the right foot. A roentgenogram revealed involvement of the cuneiform and flattening of the scaphoid anteroposteriorly. The left elbow was enlarged and painful. Extension was limited to 160 degrees, with 15 degrees of motion.

Fig. 5 (Case 4).—Eight months later: increased opacity of scaphoid; compression continuing as ossification advances.

June 22: The foot and elbow were drained, and necrotic bone was curetted from the dorsum of the foot.

June 21: The Wassermann reaction was negative.

Fig. 6 (Case 4).—Same as Figure 5, showing contrast with normal bone of other foot.

July 25: The patient was discharged to the outpatient department, with the foot and elbow in a posterior splint. The wounds were still draining.

September 25: Readmission: Tissue was removed from the elbow for examination. The patient was discharged to the outpatient department.

October 1: Tissue examination suggested tuberculosis or syphilis. No spirochetes were found.

In Case 4, the increase of pressure on the scaphoid was brought about by collapse of the outer border of the foot, the result of the specific process. Here, then, the scaphoid was only relatively enlarged.

CONCLUSIONS

1. The scaphoid becomes enlarged through trauma of varying severity.
2. The roentgen-ray appearance is due to a compression fracture of the scaphoid secondary to this enlargement, a result of the trauma of weight-bearing.
3. No infectious disease or disturbance of nutrition of the bone is involved in the etiology.

125 West Fifty-Eighth Street.

BACTERIOLOGIC AND CLINICAL EXPERIENCE WITH BACILLUS ACIDOPHILUS *

LOUIS M. GOMPERTZ, M.D.
NEW HAVEN, CONN.
AND
MARTIN G. VORHAUS, M.D.
NEW YORK

Our aim was to implant *Bacillus acidophilus* in the intestine and, while maintaining it as the predominant intestinal organism, to determine what changes, if any, were noted clinically. To ascertain the bacteriologic facts, we examined the feces of every patient before treatment and then at intervals of from five to ten days. In all the cases mentioned later, the implantation of this organism was successful, and during treatment it became the predominating fecal organism, and we were able to recover live *Bacillus acidophilus* from the feces.

After infancy, milk is less prominent in the diet than during infancy. *Bacillus acidophilus* gradually diminishes until in adult life it is present in very small amounts. The adult intestinal flora is determined, more or less, by the diet of the individual. The accompanying illustrations demonstrate the changes in the fecal flora after the administration of *B. acidophilus*.

It has been our endeavor to determine the value of *B. acidophilus* when applied clinically to the human subject. Our guiding factor in this work has been the inhibition of the colon bacilli by *B. acidophilus*. Therefore, if any beneficial results have been observed clinically, they must be attributed to the decrease in the colon bacilli and a minimization of their products.

The colon bacillus is a normal inhabitant of the intestinal tract of man, and is found always in greatest numbers in the large intestine. Under normal conditions it is rare to find these organisms in the small intestine, but in certain diseased states they may even be found in the stomach, and have been held responsible for inflammation of the gallbladder and its ducts, the hepatic duct, the pancreas and even the liver itself. In addition, the bacilli are believed by many to be responsible for a number of the rheumatoid arthritides.

The colon bacillus can utilize both carbohydrate and protein material; from the latter it produces the substances that are believed to be harmful to the body. By intravenous injections of small quantities of fecal extracts, Bouchard [1] repeatedly killed rabbits, thereby proving the toxicity of these products. Fortunately, blood from the intestine, laden with these substances, first passes through the liver, which converts the toxins into harmless ethereal sulphates and combined glycuronates. Nencki and Pawlow [2] experimented on the effect of intestinal absorption in dogs in which the liver was eliminated from the circulation. This was done by an Eck fistula, which forces the portal blood to flow directly into the inferior vena cava. Therefore, the products of digestion do not pass through the liver. When fed exclusively on a meat diet, these animals promptly died, but survived for a considerable time when given only a small quantity of protein.

When an excess of intestinal toxins reaches the general circulation, there is a resulting production of a severe autointoxication. This is especially true if there exists any impairment of the excretory organs. In some persons the effects of autointoxication become less obvious in the course of time. Perhaps this is due to the development of a partial immunity to intestinal toxins. But apart from the production of immunity, different individuals show great differences in their susceptibility to this form of poisoning. Many have suggested that the results of autointoxication are found in the chronic diseases so common to our later years. Nevertheless, in spite of the most critical survey of our knowledge about the effects of colon bacillus activity, we must admit that it is an ever present source of real danger to the well-being of the human mechanism. Although the autointoxication theory is by no means universally received, it is an accepted clinical assumption that often an intestinal absorption of toxic compounds, formed in the gastro-enteric tract, originates changes in the liver, kidneys, brain and blood vessels. We believe, therefore, that the autointoxication theory is one that deserves a great deal of consideration. If the intestinal flora could be so changed that the colon bacilli would be kept at a minimum with a lessening of their toxic products, a great deal would be accomplished toward combating the results of autointoxication.

By the use of cultures of *B. acidophilus,* this, in a measure, has been done. In our studies we have employed *B. acidophilus* in various forms. By mouth we have given it first as milk fermented by this organism, and later in nutrient broth cultures. In some instances it has been given by rectal implantation. We are not enthusiastic with this method, as it must always be supplemented by oral administration. The technic is simple. After a cleansing colon irrigation of plain water has been given, two or more ounces of the broth culture is slowly introduced into the rectum without pressure. The pelvis is kept elevated during the injection and for one-half hour afterward. Of course, this method is advantageous in procuring a rapid implantation.

For oral use we have found the culture more desirable than the milk. The milk must be taken in large amounts, from a pint to a quart daily. To some persons the taste is very disagreeable, and this is an important factor if we wish patients to continue the treatment. On the other hand, the culture is much more convenient to handle, both from the physician's and the patient's standpoint. Instead of calling for their daily supply of milk, patients may secure a week's supply at one time. The dose is from one to two tablespoonfuls three or four times daily before meals,

* Read before the New York Physician's Association, April 27, 1922.

1. Bouchard, C. J.: Leçons sur les autointoxications dans les maladies, Paris, 1887.

2. Nencki, M., and Pawlow, J. P.: Arch. f. exper. Path. u. Pharmakol. **38**: 215, 1897.

depending entirely on the response of the individual. The culture may be taken with milk, orange juice or lactose and Vichy water. In a large series of cases we have failed to see any advantage of the milk over the culture. With the latter, implantation is effected as rapidly as with the milk, and is maintained as long.

RESULTS

We have arbitrarily divided the cases in this study into two groups. Both types, however, have manifested general symptoms of their disease. The first comprises the so-called chronic intestinal stasis or autointoxication group, with more or less existing constipation. Case 1 will serve as an illustration.

CASE 1.—A woman, aged 31, a public school teacher, gave a history of chronic constipation of about fifteen years' duration. It was necessary for her to resort to various cathartics every few days in order to have an evacuation of the bowels. Clinically, the patient gave a definite history of autointoxication, with all its attendant symptoms: the bad breath, nausea, irritability, pains in the limbs, and a general feeling of malaise. These symptoms would disappear after a thorough bowel movement, only to return when constipation was again in evidence. She has been under observation since Oct. 4, 1919, and thoroughly investigated. The physical examination disclosed absolutely nothing abnormal. The blood showed a normal count; the stomach contents, a slightly increased acidity; the stool examination disclosed a preponderance of colon bacilli, and the urine a large amount of indican. The Wassermann reaction was negative. A roentgen-ray series of the gastro-intestinal tract was negative to obstruction or kinks of any kind, but a spasticity of the transverse colon was noted with a thirty-six hour retention. Feb. 26, 1921, she was placed on *B. acidophilus* cultures in one tablespoonful doses in milk, four times daily, and all cathartics were stopped. At the end of the third day she was forced to take a dose of castor oil to obtain relief. At this time the dose of the culture was increased to two tablespoonfuls three times daily. At the end of the first week bowel movements began to occur regularly, and have continued ever since. At that time her toxic symptoms began to disappear. Frequent examinations of the feces were made, and *B. acidophilus* was found to be the predominating organism. While we do not believe that this patient is cured of her constipation, her general health has materially improved.

Fig. 1.—Pure culture of B. acidophilus.

The results in this group of cases must be considered from two points of view: as regards (1) their toxemia, and (2) their constipation. The subjective signs of improvement are first noticed by the patient in from three to ten days after treatment. The usual report of the patient is that there is a general feeling of improvement. There is early relief from the depression and malaise, so common to this variety. Headache disappears soon after, and, lastly, the abdominal distress is ameliorated. The constipation may or may not be relieved. However, in the mild forms of intestinal stasis, improvement has occurred.

The second large group of cases in this study comprises the diarrheas. In all of these, we excluded the possibility of tuberculosis of the intestine and diarrheas due to organic disease. Case 2 is typical:

CASE 2.—A woman, aged 34, under observation since April 14, 1921, with a history of digestive disturbances for the last five years, reported painful intestinal contractions, with the evacuation of large quantities of mucus, at times blood-streaked and always diarrheal in character, the bowels moving on an average of eight times a day. Loss of appetite, weight and sleep also were prominent symptoms. The physical examination was essentially negative. Except for the absence of free hydrochloric acid and a low total acidity, the stomach contents were negative. The stool examination on a flesh-free diet revealed undigested food particles and the presence of blood. A predominance of gram-negative bacilli was noted. The roentgen-ray examination of the gastro-enteric tract was negative except for gastric retention at the end of six hours. All other examinations were essentially negative. As the patient had gone the rounds of numerous physicians and had been dieted and given drugs for this condition, she was immediately placed on *B. acidophilus* cultures. Stool examinations were made every two days, and within ten days after treatment was begun, the feces showed a fairly good implantation of *B. acidophilus*. Coincident with this implantation the patient experienced relief from pain. The blood had entirely disappeared from the stool, and the mucus lessened. Up to the present she has continued to improve. She has a formed stool, and altogether has increased in weight and strength. During the course of treatment the culture could not be obtained for three weeks, and there was a return of her former condition. However, as long as the culture is taken, she enjoys good health.

As in the other group, we have viewed the results from two angles. The relief of the general symptoms was apparent in from five to fifteen days. The patients' report was similar to the first group: first, a feeling of improvement in the general condition and then a gradual disappearance of the symptoms until a normal state was reached. The diarrhea in this class of cases showed a marked response. In a majority, a very decided improvement was noticed at the end of the first week. Within three weeks the patient was having one or two natural movements daily. This continued all through treatment, and was present in a surprisingly large percentage of those taking the culture.

In both groups the patients' reports were carefully checked up by notation of the improvement in the objective findings. Bacteriologic studies of the feces were made in every case. After the first examination of the feces, only gram stains were made, and the relationship of the gram-negative and gram-positive flora was noted. Indican studies also were made. However, the laboratory findings were never considered important unless they coincided with the general clinical results.

In summarizing this work, attention should again be called to the fact that the improvement obtained by *B. acidophilus* implantation can be attributed only to a decrease in the activity of the colon bacilli. In the cases comprising this study, no other medication was

given. Dietary changes were carried out in all cases according to the individual needs.

We believe that the culture in broth is the most desirable means of administering *B. acidophilus.* It is more pleasant and more convenient for the patient, and it affords the physician a more accurate control of the dosage. It is of the utmost importance to make fecal studies in all cases. This is not only of value as an indication for the treatment, but also gives definite information as to the adequacy of the dose. In persons who do not show signs of implantation within a week, rectal injections of the broth may also be employed. Clinically, our results have been most gratifying. In the treatment of 200 patients in the constipation group and 100 in the diarrheal group, it was noted that in those suffering from autointoxication with constipation, 70 per cent. showed complete relief from their symptoms of toxemia; 15 per cent. showed some improvement, while the remaining 15 per cent. showed none whatsoever.

Since the 15 per cent of failures included many who did not continue the culture for an adequate length of time, we feel reasonably sure that if this treatment is maintained for four weeks in every case a larger percentage will show an improvement. In contradistinction to the relief of the symptoms, the constipation itself showed complete relief in only 25, improvement in 35, and failure in 40 per cent. of the cases.

In the second group, the diarrheas, there was complete relief from all symptoms in 70, some relief in 10, and failure in 20 per cent. of the cases.

Although this study has not been carried on long enough to determine the permanence of these figures, we wish at this time to record the fact that, in those cases under observation for a year or more, from 10 to 15 per cent. showed a return of their symptoms.

Fig. 2.—Fecal flora before treatment: colon bacilli predominating.

Fig. 3.—Same case: partial implantation of B. acidophilus.

Fig. 4.—Same case: complete implantation of B. acidophilus.

EVALUATION OF RESULTS

We are confident of the value of *B. acidophilus* in the intestinal conditions mentioned in this paper. However, it is only one link in the therapeutic chain, and affords a larger chance of success in the treatment of these obstinate conditions than many forms of therapy. That *B. acidophilus* can be successfully implanted in the human intestine is indisputable, as is also the fact that this implantation can be maintained at such a high level as to keep *B. acidophilus* the predominating intestinal organism.

Its effect in changing the intestinal contents is noted in two ways: In the constipation group the feces become comparatively odorless, while in the diarrheas there is a gradual formation of the fecal material until a soft, light and partially formed stool results. The second effect is the relief from the toxic symptoms that previously existed. This bears a definite and constant relationship to the change in the fecal flora. Furthermore, the accumulated evidence and clinical belief that the products of intestinal putrefaction are harmful give additional importance to these results. As a consequence of more than two years' work, we believe that *B. acidophilus* minimizes intestinal autointoxication and is indicated in the so-called toxic intestinal conditions.

It seems proper, however, to remember the fate of similar predecessors, particularly the bulgarian bacillus, and a word of caution now would not be amiss. After all, the virtue of this remedial agent lies in its ability to inhibit the colon bacilli. As the latter organism is held responsible for intestinal "toxicity," the range of usefulness of *B. acidophilus* seems clearly defined. To employ the milk or culture in other conditions will eventually tend to discredit it and put it in ill repute. Honest enthusiasts and dishonest publicists may hail it as the "longevity bug," but we must not be deceived by the cry of a panacea. We feel that its value as outlined above is established. Whether it has additional properties should be first corroborated by sober and mature judgment. It is important to mention that when the administration of the culture ceases, the colon bacilli begin to increase, slowly at first, until the fifth or the sixth day, at which time they again are present as the predominant type of bacteria. Coincident with the increase of *B. coli,* the previous clinical symptoms again manifest themselves.

There are, nevertheless, definite indications for future work with *B. acidophilus.* Its effect on typhoid, paratyphoid and the dysentery group deserves careful consideration. Theoretically, *B. acidophilus* may be employed as a prophylactic agent. A colon bacillus infection of the gallbladder and its ducts or of the pancreas finds us usually without any means of proper treatment. By regular courses of *B. acidophilus* we have a means that offers some hope in the prevention of an ascending infection by *B. coli.* It certainly deserves consideration because of its harmlessness and ease of administration.

We suggest that *B. acidophilus* be given a trial in the intestinal conditions outlined. We do not believe that the Fountain of Youth has been discovered through its use, but feel reasonably certain that it is a therapeutic agent worthy of further investigation.

1195 Chapel Street—1 West Eighty-Fifth Street.

LEISHMANIASIS IN THE UNITED STATES

REPORT OF THE THIRD AMERICAN CASE OF KALA-AZAR AND OF A CASE OF ORIENTAL SORE *

HAROLD K. FABER, M.D.
AND
HERMANN SCHUSSLER, JR., M.D.
SAN FRANCISCO

Within a period of two months, two patients with leishmaniasis, one with kala-azar and one with oriental sore, were admitted to the Children's Clinic of the Stanford Medical School. While kala-azar is of extreme rarity in the western hemisphere, one case having been previously reported from Paraguay [1] and one from Boston,[2] reports of oriental sore in North America are increasing in frequency. During the current year no less than seven cases [3] have been reported from the United States and Canada. All of these, save two recently described by Fox,[3] have passed undiscovered or unsuspected by immigration inspectors. When we realize that both forms of leishmaniasis, the systemic and the cutaneous, flourish in the Old World under climatic and other conditions such as can undoubtedly be duplicated over wide areas of this continent and within latitudes which include at least two thirds of the United States, we should regard the infection as a potential danger of considerable import against which we should increase our safeguards.

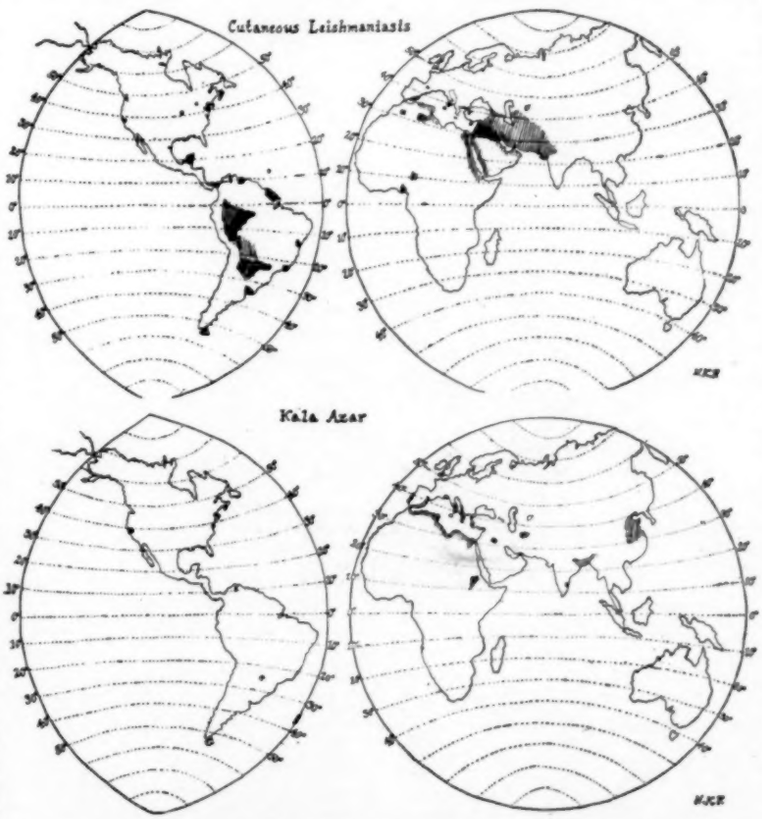


Fig. 1.—Approximate distribution of cutaneous leishmaniasis and of kala-azar. The exact limits of endemic foci cannot be determined. In South America the extent of infection is probably greater than is here shown, cases having been reported in every country north of the thirty-fifth parallel South, excepting Chile. Black dots represent imported cases.

REPORT OF CASES

CASE 1.—*Kala-azar* (H. K. F. and H. S., Jr.). *History.*—B. P., a girl, born, Jan. 30, 1920, in the province of Bari, Italy,[4] was admitted to the Children's Clinic, May 6, 1922, because of fever, loss of strength, weight and appetite, fretfulness and recent jaundice. The father and mother were well. They had had no other children. In May, 1921, when the patient was 15 months old, the family left Bari, went to Naples, and embarked for the United States. They arrived in Boston, June 14, and immediately went to San Francisco, where they have lived continuously ever since. The birth of the patient, and the developmental and feeding histories were essentially negative. No exposure to kala-azar was known. In Italy the child had been bitten many times by fleas. No bedbugs or body lice had been seen by either parent. No spots on the child's clothing or bedding, such as might have been made by crushed bedbugs, were ever observed, either at home, in Naples or on the steamer. The child was apparently well at the time she entered this country, and for about six months thereafter. In December, 1921, she became sluggish and irritable, refused food, slept poorly and cried a great deal. The symptoms gradually increased in severity. By March, 1922, she had become very weak, very pale and had some cough and fever. After a short period of improvement, the condition became rather suddenly worse. May 2, jaundice appeared, accompanied by light—but not clay—colored stools. There was no vomiting. Swelling of the abdomen had not been noted by the parents.

Physical Examination.—The age of the patient was 27½ months; the weight, 27¼ pounds (12.4 kg.); the length, 33 inches (84 cm.). The circumference of the head was 18¾ inches (45.7 cm.); of the chest, 18¾ inches (45.7 cm.); of the abdomen, 20⅛ inches (50.8 cm.). The skin and sclerotics were definitely icteric. There was moderate prostration. There was extreme asthenia. Apparently, nutrition was fair. The head, neck, lungs and heart were essentially normal. Respiration was rather shallow owing to abdominal enlargement. The liver was not tender; its edge was sharply defined and firm, and extended in the midclavicular line 10 cm. below the costal margin. The surface was smooth. The spleen filled the left flank; the lower pole was 12 cm. below the costal margin in the midclavicular line. The edge was notched and sharply defined; the substance, firm and not nodular. There was no abdominal or visceral tenderness, and no spasm. The superficial veins were prominent. The peripheral lymph nodes were not notably enlarged. The tendon reflexes were not obtained.

Laboratory and Special Examinations.—Blood examination revealed: erythrocytes, 2,350,000; leukocytes, 3,400, a ratio of 690:1; polymorphonuclears, 22 per cent.; small lymphocytes, 77 per cent.; large mononuclears, 1 per cent.; no transitionals, basophils or eosinophils; hemoglobin, 40 per cent.; color index, 0.85; poikilocytosis and anisocytosis. The urine was negative excepting for a positive bile test in the first examination only. Examination of the feces was twice negative for ova and parasites; there was no occult blood. The Widal test was negative. Two blood cultures were negative. The Wassermann test (with cholesterinized antigen) was negative. The coagulation time was three minutes. Roentgen-ray examination revealed the chest normal and the spleen enlarged. The tuberculin test, intracutaneous, human

* From the Division of Pediatrics, Stanford University Medical School.

1. Migone, L. E.: Un cas de kala-azar à Asunçion (Paraguay), Bull. Soc. de path. exotique **6**: 3 (Feb. 12) 1913.
2. Talbot, F. B., and Lyon, A. B.: Kala-Azar in a Child (the First American Case), Am. J. Dis. Child. **16**: 154 (Sept.) 1918.
3. Spencer, R. D.: A Case of Oriental Sore (of Italian Origin) Encountered in the United States, J. A. M. A. **76**: 1494 (May 28) 1921. Smith, D. K.: Oriental Sore: Report of Four Cases, Arch. Dermat. & Syph. **5**: 69 (Jan.) 1922. Fox, H.: Two Cases of Oriental Sore (Cutaneous Leishmaniosis), New York M. J. **116**: 365 (Oct. 4) 1922.
4. Bari, a province in southern Italy bordering on the Adriatic, is shown on Laveran's map (Leishmanioses, p. 69) as one of the places where kala-azar has been found.

and bovine, was negative. The changes in the blood picture while the child was under treatment and observation are shown is the accompanying table.

Diagnosis.—At the time of admission, leukemia, malaria and Gaucher spleen were thought to be the strongest probabilities, with syphilis and tuberculosis as possibilities. Leukemia was ruled out by the blood picture; against Gaucher spleen were the low erythrocyte count, the presence of fever and jaundice, the absence of conjunctival thickenings, characteristic pigmentation and epistaxis; against malaria were the absence of plasmodia from the blood and the failure of quinin to affect the fever; while against syphilis was the negative Wassermann reaction, the absence of any of the usual signs of syphilis, and in addition the size of the spleen, which was much larger than is seen—with possible rare exceptions—in syphilis. Kala-azar was discussed at ward rounds soon after the child was admitted. We were familiar with the fact that in Italy the so-called infantile splenic anemia had been found actually to be infantile kala-azar. We inquired of the mother, who unfortunately did not speak English fluently, as to the child's nativity. Her answer that the child had always lived in San Francisco misled us, and long delayed the establishment of the diagnosis. It was only much later that we found her statement to be incorrect and that the child had actually lived the first seventeen months of its life in a district of Italy where kala-azar is endemic.

BLOOD COUNTS

Date	R. B. C.	Hgb.	C. I.	W. B. C.	Pol.	Lym.	L. M.	Tr.	Eos. Bas.	R. B. C. W. B. C.	Comment
5/ 6/22	2,350,000	40 T	0.85	3,400	749	2,620	34	0	0	690	Poikilocytosis, anisocytosis
5/11/22	2,220,000	....	....	3,380	372	2,946	34	34	0	660	Poik., aniso.
Quinin sulphate, 20 grains, May 12-15											
5/20/22	2,260,000	40 T	0.89	3,900	468	3,393	0	39	0	580	Poik., aniso.
Ferric cacodylate, May 23-June 1											
5/26/22	2,900,000	40 T	0.67	4,100	943	2,296	820	41	0	710	Poik., aniso.
5/31/22	3,460,000	38 S	0.55	6,650	1,749	4,240	665	0	0	520	
6/ 6/22	3,660,000	45 T	0.62	8,250	825	5,775	990	660	0	440	Poik., aniso., polychr., 2 normobl. (at Lane Hospital)
Patient transferred to San Francisco Hospital, June 7											
6/ 7/22	4,110,000	40 D	0.49	9,000	630	7,020	450	0	0	460	(At S. F. Hospital)
Quinin sulphate, 90 grains, July 11-15											
7/18/22	.....	35	....	6,800	2,040	3,740	1,020				
Antimony and potassium tartrate begun, July 21. Transfusion, 100 c.c. of whole blood, Aug. 3											
8/ 4/22	2,470,000	40	0.81	3,900	.....	.....	...	...	...	630	
Ferric cacodylate, Aug. 12-Sept. 2											
8/24/22	3,630,000	65	0.90	4,600	1,334	2,990	276				
9/18/22	3,160,000	54									
9/25/22	4,470,000	68 T	0.76	11,525	1,844	8,874	0	346	461 E	390	

Treatment and Course.—The jaundice disappeared spontaneously three days after admission, when the child's extreme pallor, hitherto masked, became evident. Quinin sulphate was given from May 12 to 15 to a total dosage of 1.3 gm. (20 grains), without effect on the temperature, size of the spleen or general condition. The jaundice disappeared on the third day and did not recur. May 20, the right tympanic membrane was found to be bulging, and paracentesis released an abundant yellowish pus, again without effect on the temperature or general condition. Injection of ferric cacodylate daily in 1 c.c. doses from May 23 to June 1 was accompanied by a progressive increase in the red cells but not in the hemoglobin; a slight improvement in the general condition and a somewhat lower temperature also ensued, but without change in the size of the spleen. In the San Francisco Hospital, liquor potassii arsenitis (Fowler's solution) was given without notable effect. Another course of quinin, 90 grains between July 11 and 15, was also without effect. The diagnosis of kala-azar having been established, July 20, by splenic puncture, intravenous injections of antimony and potassium tartrate were instituted on the next day. At this time the child was extremely pale and asthenic. Beginning with 10 mg., the doses were cautiously increased to 100 mg., so that at the time of the last injection, October 26, thirty-three injections to a total of 1,786 mg. (27½ grains) had been given. A definite response to the drug was evident within a few days in lowering of the fever and improved appetite and strength. Lessening of the size of the spleen and gain in weight were noted about two weeks later. Ferric cacodylate was again given from August 12 to September 2, and was accompanied by a marked improvement in the blood picture. By September 25 the child was so far recovered that she could be discharged from the hospital. At this time the leukopenia had given place to a white count of 11,525, eosinophils had reappeared, and the red cells had increased to 4,470,000, and the hemoglobin to 68 per cent. She was observed at the Stanford Children's Clinic twice a week thereafter. At the visit of October 26 she weighed 30 pounds (13.6 kg.), had an excellent color and was strong and active, but the spleen, though softer, was still nearly at the umbilicus, 10 cm. below the costal margin in the midclavicular line. Its mass was perhaps a little more than one half of its maximum. The injections were discontinued at that time because of vomiting. November 21, the spleen could no longer be felt. While she cannot be considered as cured and will be closely watched for recrudescence of symptoms with a view to further medication, her present condition is excellent.

Splenic puncture would also have been made much earlier had not one of us seen the procedure end fatally some years before, and been averse to accepting the risk. The patient was transferred from Lane Hospital to the San Francisco City and County Hospital, June 7, for financial reasons, without an established diagnosis. In July the correct story of the child's nativity was obtained and kala-azar seemed so probable that the risks were accepted and the spleen was punctured. No ill effects ensued. The smears, examined in the laboratory of pediatrics at Stanford University Medical School, showed after considerable search a number of typical Leishman-Donovan bodies, from which the accompanying photomicrographs and drawings were taken.

CASE 2.—*Oriental sore* (H. K. F.). *History.*—R. H., an Armenian boy, born, Dec. 13, 1916, was admitted to the children's clinic, July 5, 1922, because of sores on the left buttock. During the Turkish persecution, the family left Armenia, reaching Persia in July, 1918. In 1921 they settled near Bagdad, where "Bagdad boil" was very common; but the father, who was an intelligent and educated man, did not know of any direct exposure, or of any exposure to bedbugs, fleas, lice or other biting insects. He stated that the disease was ascribed to eating dates. The family emigrated to the United States in April, 1922, passing inspection without incident. The child had been free from previous illnesses, excepting the immediate effects of severe privation during 1918, and otitis media lasting from 1918 to 1920, without subsequent recurrence. The present illness began in October, 1921, while the child was in Mesopotamia, as a small, indurated, red papule about the size of a pea, on the left buttock, which became gradually larger but apparently did not ulcerate until after April, 1922. The ulcer had gradually increased in extent, and recently two smaller papules had appeared near the original lesion. There had been no constitutional symptoms, and the lesion itself had caused no great discomfort.

Physical Examination.—This was essentially negative except for the lesions on the left buttock. The ulcer was roughly circular, about 1½ inches (4 cm.) in diameter, with irregular, ragged, sharply excavated edge and the floor occupied by granulations from which there was very little discharge. Just to the right of the upper end of the internatal fold was a

papule about ¼ inch (7 mm.) in diameter covered with a silvery gray crust. Another small lesion, apparently pustular, was equidistant from the other two. The blood count was essentially normal. Cultures and inoculations (white mouse and dog) of scrapings from the lesions were negative.

The father's statement that the child had a "Bagdad boil" gave the clue to the diagnosis, and scrapings from the three lesions, stained with Wright's stain, revealed after a considerable search a moderate number of characteristic organisms.

Treatment and Result.—A 2 per cent. ointment of antimony and potassium tartrate (tartar emetic), as recommended by Manson, showed no prompt curative effect in this case. After a week's application a number of pustules appeared, due no doubt to the drug itself, and complicated the treatment. The lesion rapidly healed after a mixture, prescribed in the skin clinic, was applied. This mixture consisted of creosote, 0.3 c.c.; ointment of mercuric nitrate, 4 gm., and sufficient petrolatum to make 30 gm. By October 7, the lesions were completely healed. The site of the original ulcer was marked by a silvery contracting scar, and of the smaller lesions and pustules by slightly pigmented spots.

VARIETIES OF LEISHMANIA INFECTION

These may be separated into two groups, the systemic and the cutaneous. It is highly probable that these are due to different organisms having a morphologic resemblance (*Leishmania donovani* and *Leishmania tropica*). Not only does kala-azar, the systemic infection, show differences of geographic distribution and of other phases of epidemiology, but at least one case has been described in which a single individual contracted both diseases at different times, thus demonstrating lack of

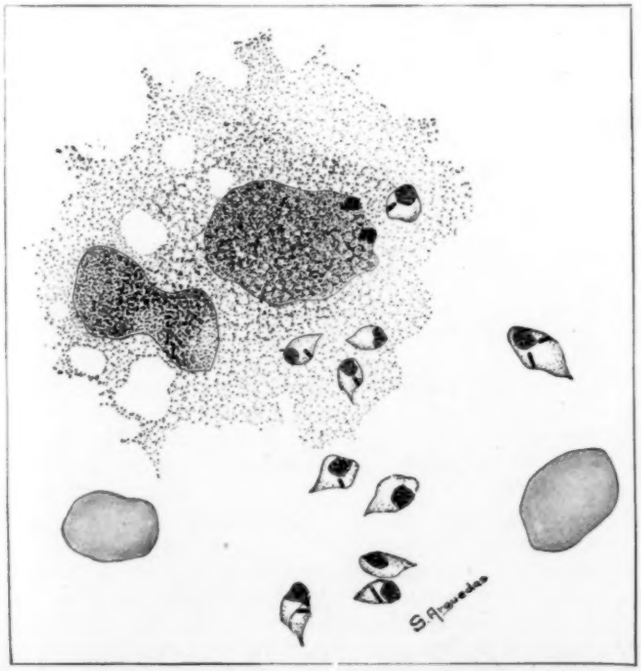


Fig. 2 (Case 1).—Kala-azar: smear from splenic pulp, free forms and cell inclusions.

cross immunization. There is, moreover, a cutaneous form of kala-azar, recently described by Brahmachari [5] occurring in persons incompletely cured of the ordinary form, which does not resemble oriental sore in any respect, and some cases of oriental sore and espundia have systemic symptoms which are not those of kala-azar.

5. Brahmachari, U. N.: A New Form of Cutaneous Leishmaniasis, Indian M. Gaz. **57**: 125 (April) 1922.

Oriental sore of the Old World and the cutaneous disease of South America (espundia, leishmania americana, and the like) differ in severity and in the tissues commonly attacked, and may be either different diseases or different varieties of the same disease. The former is characterized by the tendency of the lesions to be single or few in number, remaining discrete and

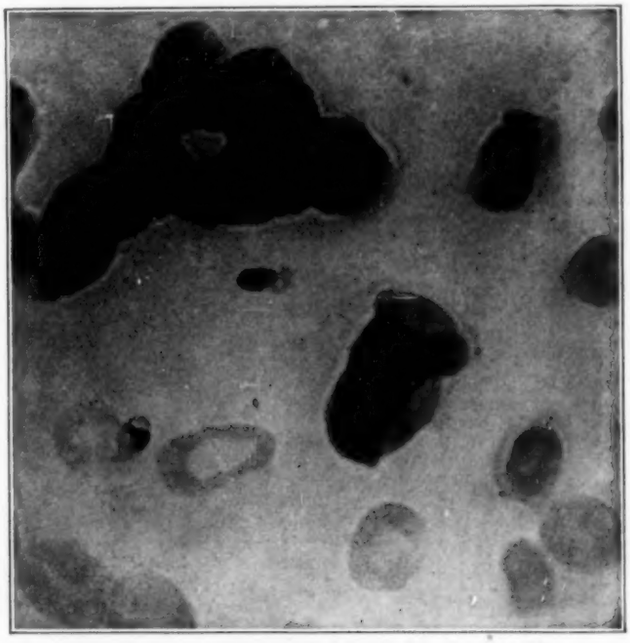


Fig. 3 (Case 1).—Kala-azar: smear from splenic pulp; two Leishman-Donovan bodies, with trophonucleus and blepharoplast.

rarely attacking the mucous membranes; the latter shows a multiplicity of lesions which frequently attack the mucous surfaces, particularly of the nose and lips.

GEOGRAPHIC DISTRIBUTION

The accompanying map (Fig. 1), compiled from various sources—largely from Laveran's [6] monograph—shows roughly the regions of the earth where Leishman infections have been found to exist endemically. It will be seen that kala-azar is limited at present to the Old World (excepting three imported cases in the New) between latitudes 10° N. and about 44° N. The three chief centers are (1) the Ganges basin and Madras in India; (2) China between the Yang-tse River, Peking and the Yellow Sea, and (3) the Mediterranean littoral. The great endemic region of oriental sore extends from the eastern shores of the Mediterranean eastward to the Persian Gulf, and thence eastward as far as Delhi in northwestern India. Probably secondary to the Syrian focus are the infected areas on the shores of the Red Sea, and possibly those of southern Italy and Sicily and those of northern Africa in Tunis and Algeria and Morocco. Infected areas also exist in the valley of the Niger not far from the equator. In South America the distribution is very wide, probably involving most of the continent east of the Andes between Panama and latitude 35° S. Large portions of the Amazon valley, of the Guianas, of northern Argentina, and Paraguay are known to be infected; also certain parts of the coastal regions; while cases have been reported from Colombia, Ecuador, Peru, Venezuela and Uraguay. In North

6. Laveran, A.: Leishmanioses, Paris, Masson et Cie, 1917.

America the disease is endemic in Yucatan, and it seems unlikely that Central America has entirely escaped. It is seen, therefore, that in the Old World, oriental sore occurs between 5° N. and about 43° N., while in the New World it occurs between about 35° S. and 22° N. Of the imported cases of kala-azar in the New World, one was reported by Migone [1] from Asuncion, Paraguay, in an Italian adult; one from Boston by Talbot and Lyon [2] in a Greek child, and the case here reported from San Francisco, in an Italian. All the cases of oriental sore in the United States and Canada with one exception have come from the Old World, chiefly from Mesopotamia. MacEwen [7] has reported one case, observed in Chicago, originating in South America. It should not be forgotten that from the first American case Wright [8] described and established the morphology of the infecting organism.

MODE OF TRANSMISSION

It is probable, though not conclusively proved by inoculation, that the bedbug is the chief if not the only transmitting agent of kala-azar. A recent study of the insect problem by Patton,[9] to which the reader is referred for the details, shows the reasons on which this belief is founded. Adie [10] has recently found the organisms swarming in a bedbug caught in the bed of a patient suspected of kala-azar. It should be noted that Patton believes that the disease is not caused by the bite of the insect but only when it is crushed on the skin, thus freeing the organisms inhabiting the intestine, which then enter the human host through small abrasions, such as might be caused by the insect's proboscis. If this is the case, it would be possible for one bug to communicate but one case of the disease. This, together with the probability that not more than 5 per cent. of bedbugs coming in contact with kala-azar patients become infected, would explain the very slow spread of epidemics. The natural mode of transmission of oriental sore is still unexplained. Fleas, bedbugs, flies and mosquitoes have all been blamed, but the case has not been proved. Patton incriminates the bedbug, and Wenyon the mosquito. Earlier work pointing to the dog-flea as the carrier has not been confirmed.

Manson [11] states that the most probable insect carrier is some species of *Phlebotomus*.

THE MICRO-ORGANISM

In its commonest form, the organism as obtained from the spleen or curettings from the sore is round or oval, sometimes pointed at one end, usually from 2 to 3 microns in width and from 4 to 5 microns in length. It has an eccentric nucleus (trophonucleus) and a smaller, rodlike, chromatin body (blepharoplast) at or near the periphery of the trophonucleus usually directed radially to the latter (Figs. 2, 3 and 4). With Wright's stain the protoplasm stains a faint blue, the nuclear material a dark blue. Occasionally a small additional granule of nuclear material—the kinetonucleus—can be seen near the trophonucleus. In smears from both diseases large mononuclear phagocytes can be found containing several—occasionally a great many—Leishman-Donovan bodies, sometimes apparently in process of disintegration. Dividing forms are also found, containing several typical nuclear arrangements but with the protoplasm not yet segmented. The flagellate forms, found in cultures and in insects, do not occur in the human lesions.

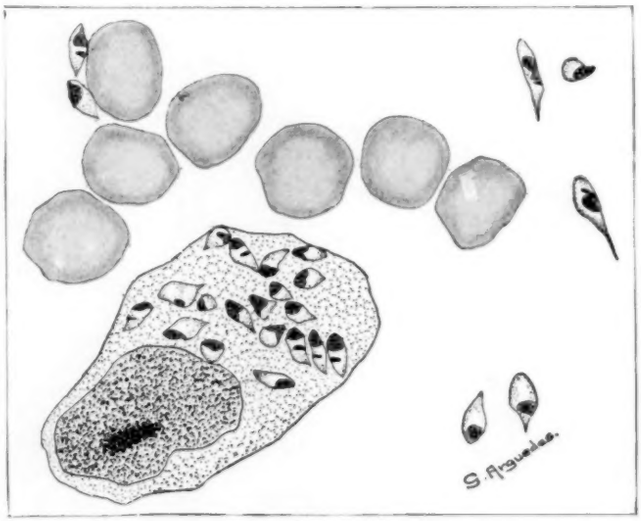


Fig. 4 (Case 2).—Oriental sore: smear from scrapings; nineteen Leishman-Donovan bodies in one large mononuclear phagocyte.

DIAGNOSIS

In answer to the question "Is there a common form of chronic splenomegaly in tropical or subtropical countries distinct from kala-azar and chronic malaria?" Rogers [12] says:

> Personally, I came to the conclusion that malaria and kala-azar sufficiently account for all the cases. . . . It is of interest to note in this connection that the so-called Banti's disease has been mainly met with in areas in which infantile kala-azar exists. It has been shown also to affect adults, while in at least one museum specimen of a spleen removed for Banti's disease abundant kala-azar parasites were subsequently found.

Clinically, the disease is characterized by an extremely irregular fever (Fig. 5), with two or more marked remissions or intermissions occurring on the same day (though this does not occur every day), a very large spleen and a considerably enlarged liver, a very marked leukopenia and a considerable reduction in the red cells. The patient is not benefited by quinin. Such symptoms and signs occurring in a patient who has come from the Mediterranean or other focus of infection justify puncture of the spleen, which rarely fails to show Leishman-Donovan bodies when kala-azar is present. It is of interest to note that the true nature of infantile splenic anemia of the Mediterranean was discovered by this means not much more than a decade ago. In view of the present etiologic obscurity of the conditions occasionally encountered in this country and labeled Banti's disease or splenic anemia, it might be well to investigate more generally the contents of smears of the spleen pulp. Splenic puncture should be cautiously done, a rather small needle, inserted obliquely, being used, and the relative respiratory movement of the spleen and the abdominal wall being prevented by manual pressure.

7. MacEwen, E. L.: Oriental Sore in the Americas, with Report of a Case, J. Cutan. Dis. **32**: 275, 1914.
8. Wright, J. H.: Protozoa in a Case of Tropical Ulcer, J. M. Res. **5**: 472-482 (Dec.) 1903.
9. Patton, W. S.: Some Reflections on the Kala-azar and Oriental Sore Problems, Indian J. M. Res. **9**: 496 (Jan.) 1922.
10. Adie, H. A.: Telegram, Indian J. M. Res. **9**, opp. p. 405, 1921-1922.
11. Manson: Tropical Diseases, Ed. 7, New York, Cassel & Co., 1921.
12. Rogers, Leonard: Fevers in the Tropics, Oxford Med. Pub. London, Ed. 3, Section "Kala-Azar (Indian and Mediterranean or Infantile Forms)," pp. 1-58. To this article is appended a bibliography extending to 1918.

Manson's injunction to use a perfectly dry needle and syringe is essential to prevent disintegration of the parasites. Napier [13] has recently advocated a test for kala-azar which may be of some diagnostic value:

To 1 c.c. of clear (not inactivated) serum from the patient in a test tube one-half inch in diameter, one drop of liquor formaldehydi is added. This is well shaken and kept at room temperature. A strong positive test is present when the serum "sets" in from one to two minutes and becomes opaque in from three to twenty minutes. In children the serum does not become so solid, and any degree of opacity is regarded as positive. In 147 out of 150 cases of enlarged spleen, splenic puncture and the formaldehyd test corresponded. In two of the ninety-one cases of kala-azar in the series, the test was negative. In one case spleen puncture was negative and the test positive; but this was probably a case of kala-azar, because it improved markedly on tartar emetic treatment.

Rogers lays great stress on the diagnostic importance of the leukocyte: erythrocyte ratio. When this is 1:1,500 or less, kala-azar is almost certainly present. In our case the lowest ratio was only 1:710. The differential count shows a relative lymphocytosis, with an increased percentage of large mononuclears and transitionals, and an absence of eosinophils.

In tropical countries, oriental sore has to be differentiated mainly from blastomycosis, desert sore (cutaneous diphtheria), tropical ulcer and tertiary cutaneous syphilis. Nonsyphilitic, granulomatous ulcers occurring in persons who have recently come from infected areas, especially Asia Minor and South America, should be regarded as due to *Leishmania* until proved otherwise. Though most common on the exposed parts, they may, as in our case, occur in the covered parts.

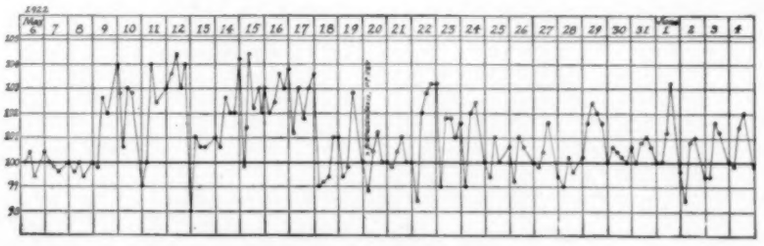


Fig. 5.—Kala-azar: temperature curve before antimony was given; note extreme irregularity, and the occurrence of two remissions on some days.

TREATMENT

Antimony is probably a true specific. It is still most commonly used as tartar emetic, but without doubt research will discover new combinations that are more effective and less toxic. Intravenous injections of tartar emetic are, however, still standard treatment. A 2 per cent. solution, freshly prepared, in distilled water is generally used, and the dose is from one-half grain to 1¾ grains (32 to 114 mg.). The largest dose that can be tolerated is said by Manson to be 2 grains (130 mg.). According to Rogers,[12] the dose is approximately 2 centigrams for each 10 pounds (4.5 kg.) of body weight. Our own patient, a child, tolerated well the larger dose of 100 mg., repeatedly. The usual practice is to repeat the injections about twice a week until fever has been absent for two months, unless symptoms of intolerance—usually vomiting—occur. Arsenic appears to have some value for the anemia. Intravenous injections of tartar emetic are also regarded as specific for oriental sore. A lanolin ointment of the same drug, in from 2 to 15 per cent. strength, is also recommended, but did not help our patient. Many other medicaments have had their advocates. The roentgen ray, freezing with ether or carbon dioxid snow, exposure to sunlight and excision have all been used with apparent success. The lesions have a strong tendency to heal spontaneously after from three to twelve months.

13. Napier, L. E.: A New Serum Test for Kala-Azar, Indian J. M. Res. **9**: 496, 1921-1922.

CONCLUSION

It is urged that medical inspectors of immigrants keep a sharp watch for leishmaniasis. There is a definite possibility that the cutaneous disease at least may become implanted in our soil. Darling [14] has expressed the belief that it may already be lodged in the southern part of the United States and that it may become endemic wherever the average annual temperature is 17.6 C. (63.7 F.) or more and the average winter temperature not lower than 6.3 C. (43.3 F.). Such conditions obtain, of course, in many parts of the United States. If the bedbug is the insect host there are large areas of this country where it can be found, and we have no lack of the other insects that have been incriminated. The latitudes within which the disease occurs elsewhere include more than two thirds of the United States. The danger of kala-azar, though perhaps actually more remote, is theoretically no less.

In the preparation of this paper the treatises of Rogers and of Manson, and Laveran's monograph have been freely consulted. While the map has been largely compiled from Laveran's book, many additions to his data have been made from later reports, particularly from South America, where cutaneous leishmaniasis appears to be extraordinarily widespread. We have not quoted all the references, as they would occupy more space than is at our disposal. It perhaps need not be explained that the shaded outlines in the map do not represent exact limits of distribution.

Acknowledgment is made to Dr. Harry A. Wyckoff, who examined specimens from the oriental sore and found the Leishman-Donovan bodies in them; to Dr. E. C. Dickson who made cultures and animal inoculations from the same case, and to Mr. Gustavo Arguedas, who made the camera lucida drawings that accompany the text.

14. Darling, S. T.: Oriental Sore, J. Cutan. Dis. **29**: 617, 1911.

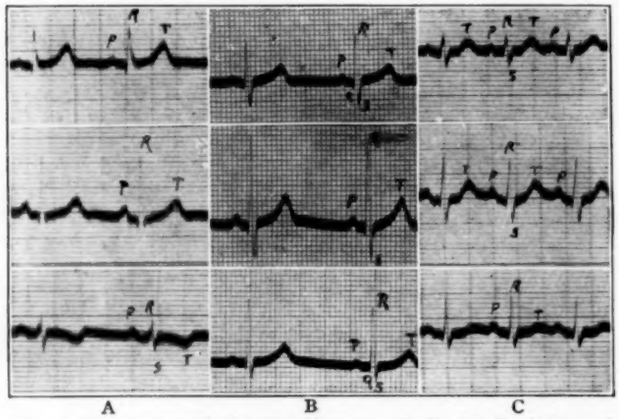
Child Welfare in Peru.—Child welfare work in Peru, states Dr. C. E. Paz Soldán in his report at the Third American Child Welfare Congress, really began with the foundation at the beginning of the seventeenth century of the foundling asylum of Nuestra Señora de Atocha at Lima. In 1659, a school for orphan and foundling girls was opened. The Office of Public Welfare, in being organized on June 30, 1826, was placed in charge of orphan children. The first maternity was organized in 1826 in Lima, thanks to the efforts of a prominent physician and statesman, H. Unanue, the pioneer of public health work in Peru. Public Welfare Societies date back to 1834. At present, there are fifty-six with an annual appropriation of £375,000, of which about £80,000 are spent on child welfare. At the Lima Maternity, 2,066 infants were born in 1921, and over 4,229 children were cared for during the same year at hospitals and dispensaries.

ELECTROCARDIOGRAMS AND HEART MUSCLE DISEASE

PRELIMINARY REPORT *

HAROLD E. B. PARDEE, M.D.
AND
ARTHUR M. MASTER, M.D.
NEW YORK

The electrocardiogram has always been looked on as an indicator of myocardial disease, but for a long time its interpretation was not clearly understood. The most evident things in the records were the irregularities of heart action, and so these were the first to attract the attention of the clinicians. Gradually, however, it came to be realized that irregular heart action of itself was not necessarily an indication of cardiac disease, and that its presence along with other signs of disease would give information of clinical importance only in certain patients. The type of irregularity, if it is due to disease at all, will indicate whether the auricles or the ventricles, or the auriculoventricular conduction system is being attacked, but it cannot tell us the condition of the most important part of the heart, the ventricular muscle.



A B C

Fig. 1.—Three normal electrocardiograms, *A*, *B* and *C*, showing the normal variations which may occur. In this and all subsequent figures, the uppermost curve is the record by Lead 1, the central by Lead 2, and the lower by Lead 3. The height of the waves is due to the strength of the current, and is standardized so that ten horizontal divisions equal 1 millivolt. Time lines are vertical, and in most of the records are 0.04 second apart. In records *A* and *C* of this figure, they are 0.20 second apart. Waves marked *P* are due to the auricles; *Q*, *R*, *S* and *T* are due to the ventricles.

The electrocardiographic record can, however, furnish us with information on this point, though not through consideration of the abnormalities of cardiac rhythm. There are certain waves in the records which are due to the activity of the ventricles, and it is from these that the information is to be derived.

The record of each heart beat (Fig.1) can be divided into two parts; the first due to the activity of the auricles and called the P wave, and the second due to the activity of the ventricles, the waves being called Q, R, S and T. These ventricular waves are subject to certain variations in records from normal hearts, as can be seen in Figure 1. These are normal records, and, in order that the features of abnormal records may be more readily understood, it may be well to mention briefly the significant abnormalities that are found.

The least significant abnormality was first described by Einthoven,[1] who noted that certain changes in the Q R S group of waves seemed to indicate hypertrophy of the right ventricle (Fig. 4), while other changes seemed to indicate hypertrophy of the left ventricle (Fig. 5). Einthoven's signs of hypertrophy have been shown by later workers [2] to indicate the predominance of the electrical effect of one or the other ventricle—a predominance (preponderance?) rather than merely a hypertrophy. Figure 4 shows the sign of right ventricular predominance (R. V. P.) and Figure 5 of left ventricular predominance (L. V. P.). However, these signs are not to be considered as an indication of diseased ventricular muscle, but only as one which is asymmetrically developed so that the normal relations of the contractions of the right and left ventricles are disturbed.

From time to time, certain other variations of the ventricular waves of the electrocardiogram have been associated with a diseased state of the muscle of the ventricles. Figure 2 shows one such type of peculiarity of the ventricular curve, which is ascribed to bundle branch block. The special features are the abnormal width (straddling) of the Q R S group of waves, combined with notching or slurring of these waves [3] and fairly large excursions. Furthermore, the T waves are fairly large and are directed opposite to the chief deflection of the Q R S group. In their typical form,

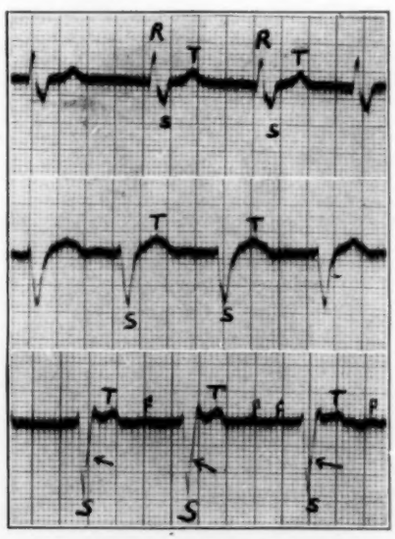


Fig. 2.—Electrocardiogram of Case 10. This record shows auricular fibrillation by the wavelets *f f f* and the irregularity of the ventricular waves. The latter have wide *Q R S* waves notched at point indicated by arrow, and the T waves opposite to the chief deflection of *Q R S*. These waves suggest a partial lesion of the right branch of the auriculoventricular bundle.

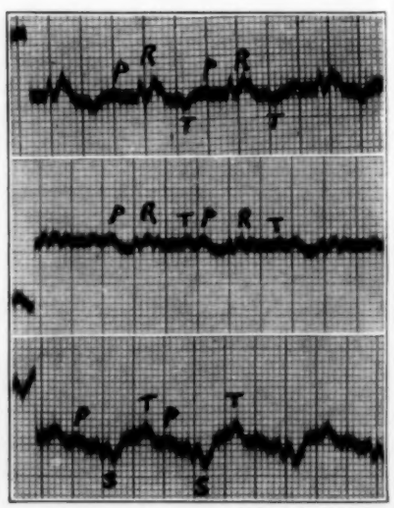


Fig. 3.—Electrocardiogram of Case 11. These ventricular waves are considered to indicate "arborization block" by the small amplitude and wide notched Q R S group, with the T waves opposite in each lead to the chief deflection of Q R S. The step-like movement appearing at the left end of each lead is due to the application of 1 millivolt.

* From the medical and pathologic services of the New York Hospital.

1. Einthoven, W.: Weiteres über das Elektrokardiogram, Arch. f. d. ges. Physiol. **122**: 517, 1908.
2. Lewis, T.: Observations on Ventricular Hypertrophy, with Especial Reference to Preponderance of One or Another Chamber, Heart **5**: 367, 1913-1914. Cotton, T. F.: Observations upon Hypertrophy, Heart **6**: 217, 1917.
3. Notching of the Q R S group, to be an abnormal feature, must be present in at least two leads, and in one of these must be near the peak of a large wave.

these waves resemble ventricular extrasystoles in appearance. They are due to a lesion interrupting one of the main right or left branches of the auriculoventricular bundle [4] and are usually associated with a widespread myocardial fibrosis. The curves of the figure are not typical, but are distinctly of this type, suggesting an almost complete loss of function of the right branch of the bundle. Figure 3 shows abnormalities which have been associated with so-called "arborization block." [5] The typical features of the ventricular waves are the wide and notched Q R S group of small excursions and the T wave directed opposite to the chief deflection of Q R S. Figure 4 has a peculiar, sharply downward curve of the T wave, with an upward convexity of the S-T or R-T interval which has been associated with coronary artery occlusion.[6] Figure 5 has two types of abnormality; the T wave is turned downward in Leads 1 and 2, and there is a notching of the Q R S group which is considered significant.[3] Figure 6 shows another form of abnormality of the ventricular waves in that they are all of very small size, and serves as another illustration of a downward T wave in Lead 1. These various types of electrocardiographic abnormality have been considered to be associated with abnormality of the ventricular muscle [7] but the evidence for this is only of a circumstantial character.

It has been our hope to contribute toward a settlement of the association of ventricular muscle disease and abnormality of the ventricular waves of the electrocardiogram. We have been able to collect the hearts from eleven bodies of persons whose records had been taken shortly before death,[8] and we have carefully examined the coronary arteries and the ventricular muscle in the gross specimen, and microscopic sections from the muscle. Sections were cut from the lateral wall of each ventricle and from the interventricular septum. They were stained with hematoxylin-eosin

CLINICAL DIAGNOSIS, ELECTROCARDIOGRAM AND PATHOLOGIC FINDINGS IN CASES STUDIED

Case	Diagnosis	Ventricular Waves	Ventricular Muscle and Coronary Arteries
1	Chronic interstitial nephritis; chronic arteriosclerosis	Borderline R. V. P.; downward T wave in all leads (digitalis)	Heart enlarged, 600 gm.; slight coronary atheroma; muscle normal
2	Aortic stenosis and regurgitation; mitral stenosis; auricular fibrillation; tertiary syphilis	Borderline L. V. P.; downward T wave in all leads (digitalis)	Heart enlarged, 540 gm.; coronaries markedly thickened and calcified, no narrowing or occlusion; muscle normal except for slight fibrous replacement in the left portion of the interventricular septum
3	Rheumatic mitral stenosis and regurgitation; heart block	Slight L. V. P.	Heart large, 425 gm.; coronaries show moderate atheroma, no narrowing; muscle normal
4	Rheumatic aortic regurgitation; mitral regurgitation and stenosis; acute pericarditis with adhesions	Normal except QRS = 0.12 second	Heart greatly enlarged, pericardium adherent in many places; coronaries normal; muscle normal except for slight invasion of the inflammatory process from pericardium
5	Coronary thrombosis; chronic arteriosclerosis	R. V. P.; T wave downward, Leads 2 and 3 and in Lead 3, with an upward convexity before the downward peak (Figure 4)	Heart large, 500 gm.; coronaries thickened, lumen of anterior descending branch occluded by thrombus at its first main division; large pale focus on posterior surface of left ventricle, where fibrous replacement was the predominant feature in sections; both here and in the lower part of the septum, especially on the left side, areas of necrosis of the muscle with the usual accompanying inflammatory reaction; muscle of right ventricle normal except for slight increase of interstitial tissue
6	Chronic arteriosclerosis; coronary artery disease; chronic myocarditis	Borderline L. V. P.; Small QRS excursions, R = 6 mm.; downward T wave in Leads 1 and 2	Heart much enlarged, 875 gm.; endocardium appears normal; wall of left ventricle thinned and has scattered grey areas; coronaries diseased and have calcareous deposits; left artery especially involved and for 3 cm. almost obliterated; marked increase of interstitial fibrous tissue and some fibrous replacement; right ventricle has only increase of interstitial tissue
7	Chronic arteriosclerosis; chronic myocarditis	All waves very small; downward T wave, Leads 1 and 2 (Figure 6)	Heart much enlarged, surface fat abnormally widespread and thick and left ventricular muscle somewhat thinned; coronaries markedly thickened and calcified, and narrowed throughout but no occlusion; considerable fibrous tissue replacement in left ventricle, less in right ventricle, and in septum no replacement, but moderate increase of interstitial fibrous tissue
8	Chronic arteriosclerosis; chronic myocarditis; auricular fibrillation	Marked L. V. P.; notched QRS group; downward T wave in Lead 1	Heart markedly enlarged, 640 gm.; left ventricle has numerous small areas of fibrosis, and at apex a thinned, fibrous, partly calcified area; patchy sclerosis of the endocardium, especially at apical part of left side of septum; coronaries show marked atheroma with narrowing, especially in anterior descending branch of left coronary, which was almost obliterated; muscle has marked increase of interstitial fibrous tissue, no fibrous replacement except in area at apex of left ventricle; right ventricle has only slight change
9	Chronic arteriosclerosis; chronic interstitial nephritis	Marked L. V. P.; notched QRS group; downward T wave, Leads 1 and 2 (Figure 5)	Heart much enlarged, 740 gm.; endocardium of both ventricles thickened, especially on septal surface of left ventricle; coronaries have extensive atheromatous plaques, little thickening, no occlusion; muscle shows diffuse but only slight increase of interstitial fibrous tissue; septal endocardium of left ventricle much thickened
10	Chronic arteriosclerosis; chronic interstitial nephritis; aortitis; auricular fibrillation	Wide QRS group; notched QRS group; curve suggests partial lesion of right branch A-V bundle (Figure 2)	Heart much enlarged, 575 gm.; left ventricle thinned toward apex; endocardium of right ventricle thickened in region between anterior and posterior papillary muscles; coronaries stiffened and tortuous, no occlusion; muscle in left ventricle has numerous dense patches of fibrous tissue replacement, elsewhere a moderate to marked increase of the interstitial fibrous tissue
11	Rheumatic mitral stenosis; mitral regurgitation	Small waves; wide QRS group; notched QRS group; downward T wave in Leads 2 and 3 (Figure 3)	Heart large, 475 gm.; muscle and endocardium appear normal except for diseased mitral valve; coronaries little or not at all thickened, slight atheroma, no narrowing; muscle has considerable fibrous tissue replacement, especially marked in the left ventricle but not accentuated in subendocardial muscle layers

4. Eppinger, H., and Stoerck, O.: Zur Klinik des Elektrokardiogramms, Ztschr. f. klin. Med. **71**: 157, 1910.

5. Oppenheimer, B. S., and Rothschild, M. A.: Electrocardiographic Changes Associated with Myocardial Involvement, J. A. M. A. **69**: 429 (Aug. 11) 1917.

6. Pardee, H. E. B.: An Electrocardiographic Sign of Coronary Artery Occlusion, Arch. Int. Med. **26**: 244 (Aug.) 1920. Herrick, J. B.: Thrombosis of the Coronary Arteries, J. A. M. A. **72**: 387 (Feb. 8) 1919.

7. Pardee, H. E. B.: The Diagnosis of Myocardial Disease, New York State J. Med. **21**: 282 (Aug.) 1921.

8. These patients were from the medical services of Dr. Lewis A. Conner and of Dr. William R. Williams, one of them being a private patient of the former.

and with Herxheimer's scarlet R. As a control to our interpretation of these sections, twelve hearts from normal persons who had met sudden death by violence were obtained from the Bellevue morgue and similarly cut and stained. This control series is reported elsewhere.[9]

As a result of this work, we are able to make some very interesting comparisons between the degree and character of disease in the ventricular muscle and the character of the electrical curve obtained. The cases have been tabulated to enable the reader to review them easily; the clinical diagnosis, electrocardiogram and pathologic findings being set down for each patient. It is noteworthy that the pathologic changes were all varying degrees or forms of fibrosis with the exception of the one heart with a recently thrombosed artery.

The first four patients were not considered to have significant abnormalities of the ventricular waves. The downward T wave in Leads 1 and 2 of the first two cases could well be due to the considerable amount of digitalis which both of these patients had received, so it was not felt that this abnormality of the curve should be ascribed to muscle disease.[10] Of these four patients, three had normal ventricular muscle and but slight changes in the coronary arteries. The other (Case 2) had marked thickening and calcification of the coronaries and a slight localized abnormality of the muscle of the left side of the septum.

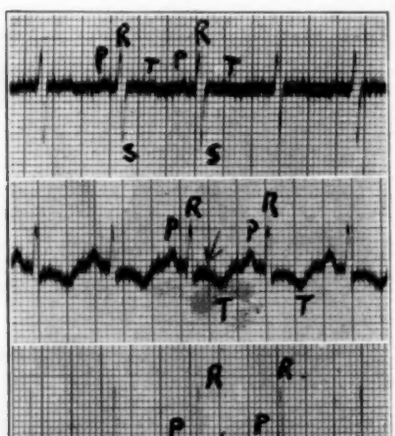


Fig. 4.—Electrocardiogram of Case 5: Right ventricular predominance (R. V. P.) is shown by the large *S* in Lead 1 and by the fact that *R* is larger in Lead 3 than in Lead 2. The upward convexity indicated by the arrow just preceding the downward T wave is frequently found after coronary artery occlusion.

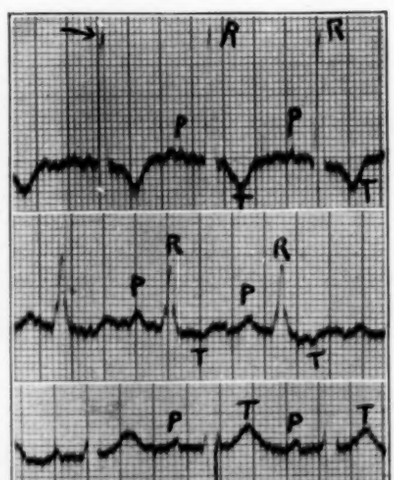


Fig. 5.—Electrocardiogram of Case 9: Notching of the Q R S group is indicated by the arrows, and the abnormal downward T wave in Leads 1 and 2 is plainly seen. Left ventricular predominance (L. V. P.) is shown by the large *S* in Lead 3 and the fact that *R* is larger in Lead 1 than in Lead 2.

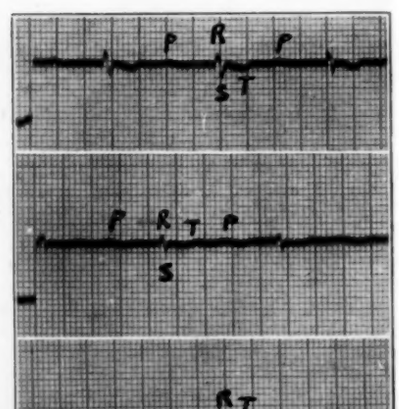


Fig. 6.—Electrocardiogram of Case 7: Prolonged auriculoventricular conduction time is evident (P R = 0.40 second)—a low grade of heart block. Note the small size of the Q R S and T waves; also the downward direction of T in Lead 1. The step-like movement at the left end of each lead is due to the application of 1 millivolt.

Cases 5 to 11 each showed one or more of the significant abnormalities of the ventricular waves, and all proved to have a distinctly abnormal ventricular muscle, though great variety in the extent and character of the disease was found. The electrocardiograms of these seven patients likewise showed a great variety of abnormalities. Case 5, with the recently infarcted area, presented the peculiarity of the T wave which is often seen in this condition, shown in Figure 4. The waves of Case 11, seen in Figure 3, have the peculiarities attributed to "arborization block" and said to be associated with severe and extensive pathologic changes. The heart did not show these extensive and severe changes, though there was a considerable degree of fibrous replacement, especially marked in the left ventricle. Particularly, it did not show the coronary artery disease or the endocardial thickening which would have been expected. Case 8 closely approximated the pathology associated with "arborization block," but did not show the typical electrocardiographic changes. It presented other abnormalities, however.

Case 10, with ventricular waves suggesting a partial lesion of the right branch of the auriculoventricular bundle (Fig. 2), presented a markedly pathologic muscle condition, and, in addition, a thickening of the endocardium of the right ventricle in the area where the right bundle branch comes to lie beneath it. It is unfortunate that we could not attempt to follow the bundle branch tissue in this heart. Case 9 (Fig. 5), with notching of the Q R S group and an abnormal downward T wave, showed a marked thickening of the endocardium, but did not have marked changes in the muscle. Cases 6 and 7 presented the feature of small excursions common to their ventricular waves (Fig. 6). In both, there was marked disease of the coronary arteries, with calcification and narrowing and marked muscle changes.

It can be clearly seen, then, that all of these hearts that had given abnormal electrocardiograms showed a distinctly diseased ventricular muscle. The condition of the ventricular muscle in these hearts leads us to feel that the bundle branch tissue, and especially its arborizations, have attracted a disproportionate amount of attention from those attempting to interpret abnormal electrocardiograms. The condition of the general mass of the muscle and the possible relation of this

9. Master, A. M.: Fatty Degeneration of the Heart, Arch. Int. Med., to be published.

10. Cohn, A. E.; Fraser, F. R., and Jamieson, R. A.: The Influence of Digitalis on the T Wave of the Human Electrocardiogram, J. Exper. Med. **21**: 593, 1915. It is now a well accepted fact that large doses of digitalis can turn downward an otherwise normal upward T wave.

to the abnormality of the waves has been neglected. It seems likely that disease involving the bundle branch arborizations is capable of changing the ventricular waves, provided it is sufficiently extensive; but then the coincident muscle involvement would also be extensive, for disease only very rarely picks out the specialized conducting tissue, leaving the nearby muscle intact.

SUMMARY

The coronary arteries and ventricular muscle of eleven patients dying of heart failure were carefully examined, and it was found that muscle disease occurred but rarely in the absence of disease of the coronaries. The outstanding lesion was always a fibrosis, though it varied much in degree and distribution.

The ventricular waves of the electrocardiogram taken shortly before death were normal in four cases: three of these had normal ventricular muscle and the other had but insignificant changes. The ventricular waves were abnormal in seven cases: one of these hearts had a moderate fibrosis, and the remainder had various sorts of marked abnormality of the ventricular muscle.

Though admitting the small number of our cases, we feel that they strongly suggest that an electrocardiogram with the special abnormalities described will indicate the ventricular muscle diseased to a definite degree, which the microscope, if not the naked eye, can discover, and which might well be expected to interfere with its function. If the ventricular waves do not show any of these special abnormalities, the indication is less clear; but it is likely that the ventricular muscle is normal, or at least affected with but the slightest degree of abnormality.

It seems that ventricular muscle disease is a far more important deduction from the finding of abnormal ventricular waves than has been heretofore considered, so that the clinical importance of abnormal electrocardiograms becomes more apparent. They give us indications of the condition of the ventricular muscle much as the stethoscope gives indications of the condition of the valves, and like the sounds of the stethoscope, the records must be very carefully considered before being used as a basis for diagnosis or prognosis.

74 West Forty-Eighth Street—Mount Sinai Hospital.

Deaths from Falls.—During 1921, in New York City, 864 persons died as a result of falls, a ratio of almost 12 per hundred thousand. Of this number, 103 persons were killed by falling from buildings and scaffolds. One hundred and thirty-eight persons were killed by falling from fire escapes and windows. Almost one third of these deaths occurred among children under 5 years of age—in other words among little children who were allowed to go out on fire escapes or to lean out of windows. Burns and scalds are another cause of death numerically important, and here, too, children are the greatest sufferers, almost one half of the deaths from this cause occurring during the first five years of life. Under 5 years of age, boys suffer a higher mortality than girls, because they are more venturesome; but in the next period of life, that is, between the ages of 5 and 14, girls suffer the highest mortality, probably because at this age the boys seek their recreation out of doors, whereas girls are more inclined to play indoors, and also because the latter are called upon to assist in the duties of the home, where opportunities for accidents of this sort are greatest.—*School Health News*, November, 1922.

Clinical Notes, Suggestions, and New Instruments

A SELF-RETAINING PALATE RETRACTOR

GEORGE D. WOLF, M.D., NEW YORK

This self-retaining instrument is presented in the interest of direct exposure of the rhinopharynx during operative procedure.

Fig. 1.—Instrument used as self-retaining tongue depressor.

Fig. 2.—Instrument used as palate retractor.

In the center of the upper member of the Jenning mouth gag there is attached a downwardly projecting pin about one-fourth inch long, mounted on a narrow plate brazed across the curve that forms the bite. A groove is milled in

this pin near its end, forming thereby a button-like extremity (Fig. 1 *A*).

The small hook on the handle of the author's self-retaining tongue depressor is properly curved and fenestrated to form a palate retractor (Fig. 1 *B*). In the body of the handle is a series of holes (Fig. 1 *C*) drilled 15 degrees from the perpendicular, and of such diameter as to engage in the groove on the pin described above as part of the mouth gag.

The palate retractor, when so engaged, is self-retaining by reason of the traction exerted by the palate (Fig. 2).

The instrument is obtainable from E. B. Meyrowitz, Inc., 520 Fifth Avenue, New York.

815 Park Avenue.

INHALATION OF BARIUM IN SOLUTION

C. R. FISHEL, M.D., TACOMA, WASH.

Miss G. W., aged 46, a schoolteacher, referred by Dr. Broman for complete gastro-intestinal examination, which was negative, stated that five years before she had an abscess at the junction of the esophagus and stomach, and that a cavity still remained which she could wash out by the use of salt water and then regurgitate it.

RESULTS OF EXAMINATION

Barium was added to the solution, and she proceeded to wash out the so-called abscess cavity. After one or two unsuccessful attempts she succeeded in getting a liberal amount of the fluid down, which passed directly into the trachea. At the bifurcation, contrary to the usual rule, the greater portion passed into the left bronchus. It passed well out in the smaller bronchi in the lower half of each lung.

The patient showed no more inconvenience to the passage of the fluid into the trachea than she would have shown if

Distribution of barium in bronchi.

it had passed into the esophagus, and insisted on repeating the procedure for the benefit of the referring physician, who had been called to see it.

The patient was examined fluoroscopically daily for several days, very little change being noticed after the first few minutes, during which time the fluid had gravitated toward the base as shown.

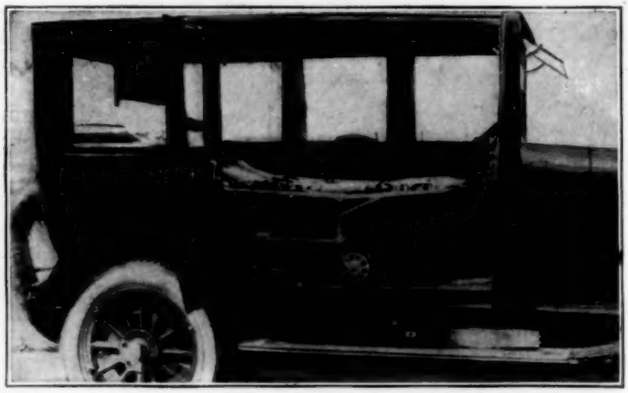
The patient returned four months later, in her usual health. The portion in the larger bronchi had been expelled, but a very large percentage still remained unchanged.

Fidelity Building.

COMBINATION SEDAN AND AMBULANCE

JOHN B. POTTS, M.D., OMAHA

In many communities where the demand for a regular ambulance is not great, a sedan that has the doors coming together at the center can be converted into an ambulance with very little difficulty. The change is made by removing



Combination sedan and ambulance.

the center post, which is held at the bottom by metal dowels, and at the top by a wing nut. After the post is removed, the larger half of the front seat and the auxiliary seat is taken out, and a board is laid on the floor to make a level surface, on which a carpet is laid. This is done quickly, and requires little or no skill. In a sedan thus converted, the space between the front and rear of the car is sufficiently wide to hold a Bomgardner cot. The foregoing can be furnished by Mr. Pfeiffer of the Pfeiffer Top and Body Corporation, Omaha.

COMPLETE ANURIA FOLLOWING A MERCURIC CHLORID DOUCHE; RECOVERY AFTER BILATERAL RENAL DECAPSULATION

GEORGE W. OUTERBRIDGE, M.D., PHILADELPHIA

This case is of interest because of the sudden, intense and protracted symptoms of a profound toxemia, involving the renal, gastro-intestinal and hematopoietic systems, occurring subsequent to a vaginal douche of a small amount of moderately strong mercuric chlorid solution, taken for the purpose of inducing a miscarriage, and because of the ultimate recovery of the patient after numerous threatening complications and an unusually high nitrogen retention figure.

Mrs. V. F., aged 38, a tertipara, being two days overdue, on the afternoon of May 27, 1922, dissolved two mercuric chlorid tablets in a glass of water and used this as a vaginal douche. (Assuming a glass to equal approximately one-half pint, this would make about a 1:250 solution.) Almost immediately she began to have severe burning in the vaginal region, and abdominal cramps, with a chill lasting half an hour, followed by vomiting and diarrhea. She said that she walked the floor in agony all that night. The next day she called a physician, who packed the vagina loosely with gauze. On the afternoon of May 29, the patient was sent to the Abington Hospital, where she was admitted to the isolation ward, as she had been taking care of her children, who were sick with measles.

On admission, the teeth were bad, the gums reddened. The breath was fetid, the tongue dry and splotched. There was excessive secretion of saliva. The heart and lungs were normal. The abdomen was scaphoid; it was not tender;

there was gurgling peristalsis. The external genitalia very much swollen and excoriated; the entire vagina was fiery red except where covered with irregular patches of greenish-gray exudate; there were similar patches on the vaginal portion of the cervix; there was a very foul vaginal discharge; the vagina was entirely anesthetic on examination. The temperature and pulse were normal. Blood examination revealed: hemoglobin, 65 per cent.; erythrocytes, 3,100,000; leukocytes, 14,400. No urine was obtainable for examination, and the patient stated that she had passed practically none all day.

Because of the lapse of forty-eight hours between the use of the douche and admission of the patient to the hospital, it was not felt that calcium sulphid would be of any avail, and she was therefore put on ordinary eliminative treatment, but she responded very poorly, refused nourishment, vomited persistently, and was obviously getting gradually worse.

From admission at 2:30 p. m., May 29, to operation at 7 p. m., May 31, a period of about fifty-two hours, no urine whatever was passed, and repeated catheterizations revealed the bladder absolutely empty. Under gas-oxygen anesthesia, therefore, both kidneys were decapsulated. The right kidney was large, pale and easily delivered; the left was much smaller, deeply congested, and could not be delivered, the parenchyma tearing very easily at the least attempt to grasp it. It was therefore decapsulated in situ. Both capsules were thin, and stripped easily. That night the patient passed 2 ounces of urine, and a total of 8 ounces in the first twenty-four hours after operation. For the next six days the amounts ran from about 6 to 12 ounces in each twenty-four hours; on the eighth day after operation, elimination rose to 18 ounces, on the eleventh day to 30 ounces, and on the twelfth day to 64 ounces. From then on the daily output ranged from 90 to 110 ounces.

A specimen of blood sent to the laboratory, May 31, just before operation, for urea nitrogen estimation was unfortunately not accompanied by a warning that unusually high values should be expected, and the test was therefore made only for a maximum of 80 mg. for each hundred cubic centimeters. This amount was present, but how much more could not be determined. A second estimation, made three days later, however, showed the remarkably high figure of 260 mg. for each hundred cubic centimeters; but since this was taken after at least some elimination had been taking place for two days, it may not represent the highest figure actually reached.

Following operation, the patient was given hot packs and other customary eliminative treatment, to which she responded poorly at first, and somewhat better after a few days. She soon developed an intense gastro-enteritis, marked by very frequent, thin, liquid, brownish or bloody stools, and severe abdominal pain and tenderness. This continued for several days, and then gradually cleared up.

June 7, a typical measles rash appeared, which soon became most intense over the entire body, and ran a typical course, followed by very free desquamation. June 11, the patient began passing blood and clots by the vagina, and aborted the next day. Examination at this time revealed a sloughing of large portions of the vaginal mucosa; but there was some tenderness on palpation, in contradistinction to the complete lack of sensation noted on admission. Ophthalmoscopic examination, June 16, disclosed a mild neuroretinitis. By this time the blood urea nitrogen had fallen to 40 mg.; it rose again, July 1, to 143 mg., and then fell gradually to 60 mg., July 8, and to 12 mg., July 26. At no time did the systolic blood pressure go above 140. One of the kidney incisions healed promptly, but the other suppurated and required daily dressings for some time.

Through the latter half of June the patient appeared to be progressing favorably, but about the end of the month she began to manifest signs of great irritability, became irrational at times, and developed a definite cardiac murmur and a high grade anemia, the blood count having fallen by July 1 to hemoglobin, 25 per cent.; erythrocytes, 1,500,000; leukocytes, 6,000. Approximately the same count was maintained for the next five or six weeks in spite of energetic oral and hypodermic administration of iron and arsenic. July 4, the temperature, which had been about normal, began to go up, soon reaching about 102 F., where it remained persistently. July 20, the bladder urine showed a pure culture of *B. coli*, and the next day a cystoscopic examination was performed and the ureters catheterized, the urine obtained from each kidney likewise showing *B. coli* infection in pure culture. Each renal pelvis was irrigated with 1 per cent. solution of mercurochrome-220 soluble, and the ureteral catheters were left in place for an hour for drainage. The following day the patient's temperature shot up to 104, but then dropped gradually, and reached normal in five days, remaining there from that time on, save for a brief rise incident to transfusion, August 8.

Because of the persistent anemia, with general rather unfavorable progress of the patient, who refused almost all nourishment at times, and became much emaciated, with dry, scaly skin, and marked prostration, a blood transfusion with her husband's blood was attempted by the citrate method, August 8. The bloods were both typed and matched, both being Type 4, and appearing to be compatible; but after the introduction of a few cubic centimeters a sharp reaction took place, the temperature rising rapidly to 104 and the pulse to 150. For a time the patient's condition seemed critical, but the transfusion was immediately stopped, and atropin and epinephrin were administered hypodermically, and in a few hours she reacted. Her condition gradually improved, and barring minor complications, such as urinary incontinence for a time when lying down, and a superficial abscess in one of the incisions, requiring reopening, August 30, her progress was satisfactory after the middle of August; she took nourishment better, the vaginal mucosa healed without any adhesions or stenosis, and she was discharged, September 6, in fairly good condition. At this time the blood count was still low, however: hemoglobin, 35 per cent.; erythrocytes, 2,300,000; leukocytes, 6,000. The phenolsulphonephthalein elimination at the time of discharge was 35 per cent. in two hours; and culture of the urine disclosed merely a few colonies of staphylococci.

Examination of the patient, December 4, revealed that she was in excellent condition; she looked and felt well, had a good color, had gained rapidly in weight and strength, and was able to do her housework and take care of her children. The blood count was: hemoglobin, 70 per cent.; erythrocytes, 3,730,000; leukocytes, 7,600. Vaginal examination was negative, save that the mucosa in considerable areas appeared very pale, smooth and atrophic. The urine was entirely normal, and showed no albumin, casts or pus.

1927 Spruce Street.

DOUBLE UTERUS: CESAREAN SECTION FOR DELIVERY OF PREGNANT RIGHT UTERUS AT TERM

JOHN A. SHOEMAKER, M.D., BEREA, OHIO

Cesarean section is not rare enough to be noteworthy except when it is performed under exceptional circumstances, and when, as the operation of choice, it is attended by success. In the case reported here, its selection and justification are strikingly brought out.

REPORT OF CASE

History and Examination.—E. W. B., aged 24, a normal appearing white woman of negative family history, who came under observation in July, 1921, was married in April, 1921, and had menstruated in April, but not since. Examination revealed a mass in the culdesac of the pelvis. She was so constipated that an enema was ordered to clean out the rectum. Later examination revealed a double uterus, a double cervix, a fibrous vaginal septum and a pregnant left uterus. For confirmation of these findings, she was referred to an obstetrician, who agreed with the diagnosis of double uterus but did not think she was pregnant. However, a miscarriage of two months' fetus occurred from the left uterus, two days later. She made a good recovery, and an examination in August, 1921, revealed each uterus of normal size, the left perhaps a little larger. Her weight was then 116 pounds (53 kg.). By October, 1921, she was perfectly normal, and menstruated regularly from both uteri.

In January, 1922, the patient reappeared for examination, stating that her last menstruation had occurred, December 6; and, early in February, examination revealed undoubted pregnancy of the right uterus. She was suffering from emesis and had all the classic symptoms of pregnancy. In April, her weight had increased to 126 pounds (57 kg.). The right uterus was enlarging and occupying the right flank. The left uterus remained normal in size. The blood pressure at this time was systolic, 110, diastolic, 50. Urine examination was negative. The pelvic measurements were: intertrochanteric, 35 cm.; interspinal, 30 cm.; intercristal, 25 cm.; external conjugate, 17 cm.

June 1, the blood pressure was 110, systolic; the weight, 127 pounds (57.7 kg.). The patient was feeling very well. The pregnant uterus was still enlarging to the right flank, the left side of the abdomen being unoccupied. June 29, there was considerable discharge of blood from the right uterus, but a week's rest in bed was sufficient to avert a miscarriage. The fetus was lively. In August, the patient's weight was 135 pounds (61 kg.). Examination was entirely negative so far as untoward symptoms were concerned, and she was referred to a surgeon for confirmation of my opinion that a cesarean section at term should be the operation of choice, as offering the best chance for child and mother. The vaginal septum was so fibrous as to prove an obstruction to labor, and there was no means of telling the thickness of the uterine wall which divided the two uteri. It is well known that a thin wall is not uncommon in a bicornate uterus, and labor possibly would rupture the pregnant uterus.

The consultant advised a cesarean section at term, which was estimated to be from September 4 to 9. He also advised sterilization of the mother after delivery. Accordingly, arrangements were made for the patient to go to the hospital, September 1, for delivery; but, without warning, at 8:30 p. m., August 13, the membranes ruptured and she began to have pain. She was brought to the hospital at 10:30 p. m., and admitted at once to the delivery room, where rectal examination disclosed that labor was in progress, with vigorous pains and three fingers' dilatation. A vertex presentation was found; the fetal heart sounds were strong, with a rate of 130. The patient was shaved for laparotomy.

Operation (Dr. Clement).—Ether was administered at 1:45 a. m. Five per cent. iodin in alcohol was employed in preparing the patient for the incision. External examination revealed a right uterus completely filling the right flank and right hypochondrium. An enlarged left uterus could be felt through the abdominal wall, about the size of an orange. A long median incision to the left of the umbilicus was made through the skin and fascia down to the peritoneum, which was lifted and incised. Some serous fluid was found free in the abdomen. The pregnant uterus was pushed from the right to the midline, and incised from the lower uterine segment almost to the cervix. A live baby was quickly delivered, the cord clamped and the placenta extracted. Hemorrhage was slight. The uterus contracted promptly. There were two distinct organs joined together almost as low down as the cervix. Each fundus apparently had a complete wall, and a single tube and ovary to each uterus. The left uterus was soft and evidently hyperplastic. Both tubes were doubled, ligated and cut. Uterine repair was accomplished by four-layer continuous mattress sutures of chromic catgut. The peritoneum was closed with continuous suture. Muscles and fascia were closed with interrupted suture, and the skin was closed with silkworm gut and clips. Anesthesia was begun at 1:45 a. m. The incision was made at 2 o'clock, the baby was born at 2:05, the placenta was delivered at 2:10, and the operation was completed at 2:30. Both mother and baby were in good condition at 3:30 a. m., when the mother awoke from the anesthetic. The infant was a girl, normal, weighing 5 pounds and ten ounces (2,552 gm.)

Outcome.—The convalescence was uninterrupted, except for a slight rise in temperature the second day. The clamps were out on the sixth day, and except for some difficulty with the bowels, the period of the patient's stay in the hospital might have been shorter. As it was, a mother who thought her confinement had been easy was removed from the hospital the fourteenth day, with a normal, healthy baby.

REPORT OF A CASE OF FUNCTIONAL APHONIA, CURED UNDER GENERAL ANESTHETIC

C. NORMAN HOWARD, M.D., WARSAW, IND.

Mrs. M. T., aged 51, whose nervous system has been below par since her husband committed suicide, a year and a half ago, in January, 1922, contracted influenza. Prior to February 1, she enjoyed the full use of her voice, but that morning she found that she could not talk above a whisper. She ascribed the condition to the influenza. A number of chiropractic treatments were taken, but the voice remained a whisper. For the relief of this condition, she reported, Oct. 30, 1922. The loss of the voice had then persisted continuously for nine months.

Examination of the larynx revealed a slight redness of the posterior fourth of the left vocal cord. There was no paralysis of either cord. Examination revealed that the heart, lungs and kidneys were negative; the Wassermann reaction was negative, and there was no aortic aneurysm or goiter. A diagnosis was made of functional aphonia, also known as hysterical or nervous aphonia.

The patient was informed that there was no paralysis of the cords; that people affected in this way always recovered, and that the voice usually came back suddenly, just as it had left. The next day, she was told that we would put her to sleep and apply medicine to the parts, and that when she woke up she could talk. She was given ether, and, while she was under the anesthetic, the region was painted with 1 per cent. silver nitrate as a local fillip to the parts. In coming out of the anesthetic, and while only partly conscious, she mumbled something above a whisper. She was encouraged to talk louder and asked to count out loud, and did so. She has since then been talking normally.

SOME PRACTICAL SURGICAL PATHOLOGIC OBSERVATIONS AND DEDUCTIONS *

ALBERT C. BRODERS, M.D., ROCHESTER, MINN.

In the practice of surgical pathology, many points of interest are accumulated that cannot be obtained from textbooks. The pathologist, in his application of his self-gained knowledge, may feel that it has been acquired intuitively, while in reality it is the result of long experience. Certain of the following observations are common knowledge; others I believe to be original.

Exophthalmic goiter is almost never associated with primary malignant neoplasia of the thyroid gland.

Calcareous deposits, except in small amounts, are almost never associated with primary malignant neoplasia of the thyroid gland.

Carcinoma of the thyroid is usually smooth and glistening and of a pale pinkish tint. However, not all pale pinkish thyroid tumors are carcinomas.

Calcareous deposits, except in small amount, are almost never intimately associated with malignant neoplasia in any part of the body, because the calcareous material follows a degenerative process, and the malignant neoplasia represents an atypical regenerative process.

When uterine scrapings are examined in the fresh state and are found to be smooth, reddish or brownish, and glistening, the condition is practically always benign. On the other hand, if the scrapings are whitish or grayish and granular, or sometimes resemble brain tissue, the condition is practically always malignant.

If a pathologist receives a mass from an ovary or fallopian tube filled with a whitish putty-like material, a very simple test will show whether the mass is a dermoid cyst, or the end-result of a tuberculous process. If cold water is allowed to run over some of the substance held in the fingers, and it washes off, the condition practically always is tuberculosis; but if the substance sticks to the fingers it is practically always the product of a dermoid cyst. The substance that washes off contains a large amount of calcium carbonate, and that which sticks is made up, for the most part, of sebaceous material.

---

* From the Section on Surgical Pathology, Mayo Clinic.

If a careful microscopic examination is made of the walls of the sac that contains the substance that washes off easily, definite evidence of tuberculosis will be demonstrated in most instances. This material is usually found in the fallopian tubes, ovaries, testicles, epididymides, vasa deferentia, kidneys, lymph nodes in various parts of the body, lungs, and sometimes beneath the skin.

If a lymph node is found to be dirty brown on section, the diagnosis is practically always noncaseating tuberculosis. Sometimes a lymphosarcomatous lymph node will have a brownish tinge, but it is pale compared to the noncaseating tuberculous node. The microscopic examination of this type of tuberculosis reveals numerous ill-defined tubercles which contain a large number of epithelioid cells, but very few foreign body giant cells.

It is well known that tuberculous fallopian tubes are practically always open, and gonorrheal tubes are practically always closed. It is also well known that sticking a needle in the little bodies which are often found on the serosa of the fallopian tube will usually indicate whether one is dealing with tuberculosis or simple inflammatory cysts. If the little bodies collapse they are inflammatory cysts, but if they do not they are tuberculous.

Epithelioma is not often found in an eroded cystic cervix or in the cervix of a prolapsed sclerotic uterus.

If a cervix has numerous cysts it is almost certain not to be cancerous, but one should be on the lookout for adenomyoma of the body of the uterus, particularly if the cysts are associated with a polypoid endometrium.

A prolapsed uterus should be examined thoroughly, since fibromyomas are often present that are almost impossible to detect without slicing sections of a specimen with a sharp knife.

A boardlike stomach, a mass or an ulcer in the stomach, associated with white lines on the serosa, is practically always cancerous, as the white lines are the result of cancer cells metastasizing through the lymphatics.

The boardlike or leather-bottle stomach should be searched very carefully for carcinoma, and if none is found the adjacent lymph nodes must be searched, with the chances that the cancer will be located and definitely recognized. The reason cancer is so often hard to find in the leather-bottle stomach is that the cells are squeezed out in such a manner by the excessive amount of fibrous tissue that it is difficult to distinguish them from fibroblasts. I believe there is a condition of linitis plastica, but the diagnosis should not be made until the tissue has been most thoroughly examined for cancer, and even then the diagnosis should be qualified.

So far as we know, the uncomplicated syphilitic stomach is devoid of white lines on the serosa. Microscopically, besides marked fibrosis there is perivascular round-cell or plasma-cell infiltration; foreign body giant cells are found in scant numbers. A mass in the stomach, with white lines on the serosa, could be tuberculous, but tuberculosis of the stomach is such a rare condition that it can practically always be excluded.

MacCarty's rule that a gastric ulcer is malignant when it is 2.5 cm. or more in diameter is a good rule to follow, as the exception is relatively rare.

Multiple ulcers of the stomach, like multiple tumors of the breast, are not so likely to be malignant as are single ulcers of the stomach, or single tumors of the breast. However, this should not be depended on alone: it is safer to make a microscopic examination.

The diagnosis of lymphosarcoma or Hodgkin's disease of a lymph node should be made guardedly in the presence of germ centers, as in these conditions the architecture of the node is usually destroyed.

All blood clots or hematomas, not caused by operation, should be thoroughly examined, as a malignant neoplasm may be encountered that would otherwise be overlooked, particularly if the blood clot or hematoma is in the region of the kidney or testicle. All hemorrhagic masses in the fallopian tubes of women of the child-bearing period should be considered ectopic pregnancies until proved otherwise.

All pyometras should be thoroughly examined, as a carcinoma may be lurking in the background.

All sinuses, abscesses or postoperative wounds that refuse to heal should be examined for tuberculosis or actinomycosis, as the former condition is often found and the latter is not rarely encountered; as a matter of fact, tuberculosis should be kept in mind in the routine of pathologic examinations, as it may be found almost everywhere. The dirty brownish granulation tissue should be selected, as tuberculosis is more likely to be found in this than in the fibrous areas. Tuberculosis and malignant neoplasia should not be regarded as antagonistic, because the two conditions thrive side by side.

Melano-epithelioma is usually easy to diagnose, but is sometimes difficult to distinguish from hemangioma, especially if the endothelial cells of the latter neoplasm have picked up blood pigment, giving them an appearance similar to epithelial cells that contain melanin. If one is confronted with this condition, it is best to test the neoplasm for iron. If it is a melano-epithelioma, it will be iron-free; if it is an hemangioma, it will contain iron. The differentiation of these two neoplasms has a very important bearing on prognosis, as every one knows that melano-epithelioma is very malignant and that hemangioma is benign.

Benign foreign body giant-cell tumors have cells that contain blood pigment, or one or more of the lipoids; it may be necessary sometimes to distinguish these cells from epithelial cells containing melanin.

If a lymph node of the groin is examined and found to be melano-epithelioma, and the clinician cannot find the primary growth, he should be instructed to examine the bottom of the patient's foot, or toes, as an apparently insignificant black mole or black spot may be causing the trouble.

A pathologic diagnosis should be made on what is seen macroscopically and microscopically, and care should be taken not to lean too heavily on the clinical findings lest the diagnosis be biased. For instance, if a surgeon sends in a mass of uterine scrapings on a piece of gauze, it is not necessary for the pathologist to know the age of the patient or whether she has been bleeding or not; the thing for him to do is to make a diagnosis of the tissue that he has in his hand. The most important thing to know is the location of the tissue.

PNEUMONIA FROM INHALATION OF ZINC STEARATE TALCUM POWDER

WILLIAM EDMONDS, M.D., NEBRASKA CITY, NEB.

A child, aged 8 months old, who was given a can of zinc stearate talcum to play with, was heard to cough, drawing the mother's attention. Talcum was found on the child's face and in its mouth. The mother washed out what she could, and then called me. I arrived in a few minutes, Nov. 18, 1922, and gave an emetic, which brought up some powder. The child seemed limp, with shallow respirations, and the pulse ranging about 90. At midnight the condition became rapidly worse. The lungs became congested, breathing was difficult, and the child moaned. The temperature rose to 104.6 and remained there in spite of treatment. High enemas brought gray and whitish discharges. The baby nursed until eighteen hours before the end, which came, November 20. The lungs were congested and filled with liquid. The temperature was 105, the respiration 97 and the pulse 105, according to the nurse's count.

Rectal Binder.—DR. SIDNEY FURST, New York, writes: In THE JOURNAL, Dec. 9, 1922, p. 2000, Dr. A. J. Chisholm described a satisfactory rectal binder. A binder that I have used for some time, which I consider good, cheap and easy to obtain, is simply the ordinary jock strap used by athletes. This consists of a girdle and three flaps. The central or broad flap is used to hold firmly the testicles, and the two lateral flaps go over the respective gluteal regions. Now, if the jock strap is reversed, the central flap will cover firmly the rectal region, and hold in place any desired dressing. The jock strap can be had at any store that carries athletic supplies, or at most drug stores. The girdle comes in various sizes. The entire strap is made of elastic material, and will stand several washings.

New and Nonofficial Remedies

ANTIBERIBERI VITAMIN CONCENTRATE-METZ

Preliminary Report of the Council on Pharmacy and Chemistry

The Council has authorized publication of the following report on the experimental status of Antiberiberi Vitamin Concentrate-Metz. W. A. PUCKNER, Secretary.

The Metz Laboratories, Incorporated, have requested the acceptance for New and Nonofficial Remedies of Antiberiberi Vitamin Concentrate-Metz. The firm has supplied adequate information in regard to the process whereby the product is obtained, and has presented evidence to show that the potency of the product is controlled by adequate animal tests. The firm, however, has presented no proof to indicate that the product is of value therapeutically in human beings, and hence it cannot be admitted to New and Nonofficial Remedies.

The Metz Laboratories frankly admit that there is no evidence to show that Antiberiberi Vitamin Concentrate-Metz is of value in the treatment of human disease. The firm wishes only to make available to students and investigators of nutrition a product which is claimed to be antineuritic (antiberiberi) when fed to pigeons. It increases the food intake of rats fed on substance deficient in vitamin B and caused increased weight, but not to the same extent as does the vitamin B (according to McCollum's nomenclature). The product is offered without therapeutic claims and no dosage is given excepting for pigeons. It is made available as a scientific article for investigation and trial.

The Council believes that, from a scientific standpoint, Antiberiberi Vitamin Concentrate-Metz is suitable for study, suitable for animal experiments and for controlled experiments on man.

For the preparation of Antiberiberi Vitamin Concentrate-Metz, freshly pressed brewers' yeast (from dark beer) is extracted according to the method described by Casimir Funk (*J. Physiol.* **45**:75, 1912) except that mercuric chlorid is used before, instead of after, the phosphotungstic acid, and that instead of silver nitrate another silver salt is used. The extract is tested on pigeons to determine its power to check and cure avian polyneuritis, and on rats to determine its relative freedom from the fraction which promotes the growth of yeast (Funk and Dubin, *J. Biol. Chem.* **48**:437, 1921). The vitamin extract is diluted with sucrose so that 0.065 gm. (1 grain) shall represent the antineuritic potency of 10 gm. of freshly pressed brewers' yeast. Approximately, the finished preparation contains ⅛ grain of the vitamin extract and ⅞ grain sucrose.

Antiberiberi Vitamin Concentrate-Metz is marketed in the following forms:

Antiberiberi Vitamin Concentrate-Metz Powder: 0.065 gm. (1 grain) represents the antineuritic potency of 10 gm. of freshly pressed brewers' yeast.

Antiberiberi Vitamin Concentrate-Metz Tablets: Each tablet represents the antineuritic potency of 10 gm. of freshly pressed brewers' yeast.

Antiberiberi Vitamin Concentrate-Metz Ampules, 1 c.c.: an aqueous solution of Antiberiberi Vitamin Concentrate-Metz, containing in 1 c.c. the antineuritic potency of 10 gm. of freshly pressed brewers' yeast. This solution is stated to retain its potency for at least six weeks.

Antiberiberi Vitamin Concentrate-Metz is not claimed to be identical in effect with vitamin B in the sense of McCollum's nomenclature, but rather with the antiberiberi vitamin as first described by Funk (*J. Physiol.* **45**:75, 1912). Funk's attempt was directed to the isolation of a substance that would cure beriberi and particularly its analogue, avian polyneuritis. Subsequent investigators (Hoskins, Osborne, Mendel, McCollum et al.) found that yeast extract and many other food derivatives keep (or maintain) rats, mice and other animals eating and growing if the other components of the diet are adequate. These also prevented and cured avian polyneuritis. The Metz Laboratories claim that the Antiberiberi Vitamin Concentrate-Metz stimulates the growth of rats pronouncedly although not to the same extent as the vitamin B (according to McCollum's nomenclature). Whether the antineuritic factor is identical with the "yeast effect" (McCollum B factor) in growing rats is debated. Funk claims that the rat factor for growth contains something more than the antineuritic—that is, the conventional yeast B is a mixture, one of which (D) is essential for yeast. This likewise is debated.

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

DIGITAN (See New and Nonofficial Remedies, 1922, p. 105).

The following dosage forms have been accepted:

Digitan Ampules (for Hypodermic Use): Each contains 16 minims (1 Cc.) of a sterilized solution of digitan equivalent to digitan, 1½ grains (0.1 Gm.).

Digitan Solution (for Oral Use): 1 Cc. contains digitan, 1½ grains (0.1 Gm.).

Special Article

THE CARE AND FEEDING OF INFANTS

(Continued from page 35)

[NOTE.—This is the second of a series of articles on the care and feeding of infants. It is addressed to the general practitioner rather than to the pediatric specialist. When completed, the series, somewhat elaborated, will be reprinted in book form.—ED.]

CONDITIONS TEMPORARILY AFFECTING THE QUANTITY AND QUALITY OF BREAST MILK

In many women the return of the menstrual period is associated with changes in the breast milk. This is especially true of the first menstrual period. In some instances they may occur with each menstruation. They may be both quantitative and qualitative. In cases of simple reduction in the food, the infant will frequently show signs of hunger. At other times, when there are also qualitative changes, colic and indigestion, the latter associated with frequent stools, occurs.

Menstruation is never an indication for weaning, and only rarely should any of the feedings be discontinued at these times, even though they cause minor disturbances in the infant. Disturbances are most frequently seen either before or during the first menstrual period.

The mental condition of the mother may have a direct influence on the milk secretion. These changes are, however, usually only temporary. When the infant is distressed at these times, it may be wise temporarily to remove it from the breast for one or two days, until the mother has recovered from the underlying cause, such as grief, shock, fright or anxiety. Expression should be practiced in the interim.

Drugs.—Alkaloids of opium, hyoscyamus, belladonna and similar drugs not infrequently pass into the milk and should therefore never be administered in large quantities to the nursing mother. Belladonna may cause a decrease in milk secretion and should be administered with caution during the period of lactation. Mercury, iodids and the newer salts of arsenic are also

secreted in the milk and may be used to advantage when a syphilitic mother is nursing her infant.

Contraindications to Nursing.—Tuberculosis, when progressive or open, is always a contraindication to nursing, because of the danger to the infant and the strain on the mother. With proper precautions, and when the breast is not diseased and human milk is not obtainable from other sources, it may be well to tide a weak infant over its first weeks by expressing the milk from the mother's breasts. It must be boiled before it is used.

Syphilis of the mother, except in freedom from infection on the part of the infant, is not a contraindication. Lack of the symptoms on the part of the mother in congenital syphilis is a very common occurrence; a Wassermann reaction on the mother's blood will usually clear up any doubt.

Any grave constitutional disease in which there is an extraordinary drain on the resources of the body, such as diabetes, heart disease with disturbed compensation, nephritis, exophthalmic goiter, malignant neoplasms, epilepsy and psychoses are contraindications to nursing.

Acute diseases should only in exceptional cases be considered as contraindications to nursing. Only conditions in which there is danger of overburdening the mother and infecting the infant should lead to its removal from the breast.

In acute infections in the mother, such as pneumonia, and the acute contagious diseases, such as scarlet fever, after considering the condition of the mother, one must weigh the danger from exposure to infection of the infant, as against the quality of the artificial food and environment in the individual case.

In the milder contagious diseases, such as measles or mumps, it is true that young breast-fed infants are rarely infected. Pertussis is an exception and has a high mortality in the new-born and young infants, and the infant should under all circumstances be protected from exposure. In the presence of diphtheria, the infant can be immunized with safety.

Pregnancy.—Only under exceptional circumstances, such as congenital weakness or illness on the part of the infant, should a mother be called on to prolong lactation after she becomes aware of her condition. First, she should not be called on to undergo the strain of nourishing her infant, the fetus and herself. Secondly, conception rarely occurs during the first months of lactation, the infant thereby having had the benefit of a good start on the breast, and bottle feeding can usually be instituted without great danger.

EXAMINATION OF HUMAN MILK

No baby should be deprived of its mother's milk because of the results obtained on chemical analysis. The baby, and not the laboratory, offers the practical test for judging the quality of breast milk. It is well known that the composition of milk, more especially in its fat and to a lesser degree in its protein and sugar content, varies greatly in the same individual, not only from day to day, but also at different periods of the same nursing. An analysis, therefore, to be of value, should be made from a specimen obtained from several expressions during the twenty-four hours, and each specimen should consist of the milk of an entire expression or the middle portion. The latter can be accomplished by allowing the infant to nurse for two or three minutes before the sample is expressed. A safer method would be to collect samples at all of the regular nursing periods. It is also essential for any conclusion that the total amount of the milk obtained in twenty-four hours be known through weighing the baby before and after each feeding. It is also to be remembered that the quality of the milk cannot be gaged by simple chemical analysis, because of the impossibility of estimating some of its most vital contents. Repeated examination of the milk from different wetnurses secreting about the same average quantities has shown marked variations in the chemical composition, notwithstanding which fact the infants under observation made equally good progress on the different milks. Again, normal chemical averages may be found in milk lacking essentials for the proper growth of the infant.

The average composition of mature breast milk approximates the figures given in Table 1.

TABLE 1.—COMPOSITION OF MATURE BREAST MILK

Reaction	Amphoteric or alkaline
Specific gravity	From 1.010 to 1.040
Fat	3.0 to 4.0 per cent.
Sugar	6.0 to 7.0 per cent.
Protein	1.5 to 2.0 per cent.
Salts	0.2 per cent.
Water	86.0 to 88.0 per cent.

On the addition of rennin it clots in fine curds. Oppenheimer [4] says:

> In general, variations in quality determined by analysis fall into three types:
>
> 1. All elements too high: This type is most frequently found in women who do too little and eat too much and too rich food.
>
> 2. Fat and sugar low, proteins high: This type is usually found in women of the poorer classes who are overworked and underfed.
>
> 3. Fat and sugar very low, proteins very high: This type is usually found in the highly strung, overeducated and highly civilized women of the larger cities, but may be found in neurotic women of any class or community.

In recent years variations in the nutritional properties of human milk have been shown to be due to its vitamin content. The vitamins of human milk are supplied from the food taken by the mother; if they are not present in sufficient quantities in her food, the milk suffers. The effect of an insufficient amount or absence of these substances is exhibited in the child. Scurvy, for example, in the breast fed has been shown to develop because of the deficiency of the antiscorbutic factor in the mother's food. The development of rickets in the breast fed has also been shown to be due to a deficiency in the mother's diet, reflected in the quality of her milk.

THE NURSING PROPER

Regularity in Nursing.—The breast that is emptied at definite intervals invariably functions better than does one which is not, as regards not only the quantity, but also the quality of the milk. Thus, regular habits in breast feeding are as essential to milk production as to its digestion and assimilation. *The baby should be wakened to be fed.*

The average mother will supply the needs of the individual meal with one breast, and the breasts

4. Oppenheimer, E.: Pub. 83, Breast Feeding Children's Bureau, Washington, D. C.

should be alternated in successive feedings. Thorough emptying of the breast should be encouraged under all circumstances, as this is our best method for increasing the milk supply, and the baby is the only means at hand by which this can be accomplished. This should be encouraged in every instance. It is most readily thwarted by allowing a lazy baby partially to empty both breasts, as this will soon lead to a diminished milk secretion.

Sometimes, however, it is advisable to give *both breasts* at each feeding, e. g., (1) during the first few days to stimulate secretion, and a little later to relieve the congested breasts; (2) to weak babies when there is an abundance of milk and they are not strong enough to get the last milk, which comes harder; this is to be followed by expression; (3) to overfed babies, when it is desirable to give them only the first and weakest milk and to lessen the yield of milk from the breast; (4) as the milk supplied by one breast fails to meet the needs of the infant. The first breast should be thoroughly emptied before the baby is allowed to take the second breast and the next nursing started on the second breast given in the last feeding.

Number of Feedings in Twenty-four Hours.—Four-hour intervals should be observed at the outset, with either five or six feedings in twenty-four hours, according to the individual needs of the child. Night nursing can often be discontinued by the second month, and babies properly fed will go from 10 p. m. to 6 a. m. without anything but perhaps a drink of water.

A three-hour nursing period is more especially indicated when the mother's breasts are small and poorly developed, as the more frequent stimulation will result in a larger twenty-four hour quantity. The same is true of a small and weak infant who finds it difficult to remain at the breast through the entire nursing period.

Length of Nursing.—As a rule, a robust baby takes three fourths of the milk obtained from a good breast in the first five minutes of a twenty-minute nursing. From fifteen to twenty minutes should be the limit for the nursing period.

The quantity received at individual nursings will vary greatly throughout the day. The early morning nursings will often yield twice the amount of the later nursings. Therefore it is necessary to ascertain the twenty-four hour quantity in order to estimate the total value of milk received.

When one breast does not meet the infant's demands, both breasts should be given at each feeding, the normal nursing time of fifteen or twenty minutes being divided between the two breasts, either equally or by alternating a long and short feeding period of fifteen and five minutes, so that each breast will receive a long nursing period at alternate feedings. Weak and lazy babies may require awakening during the nursing period to keep them at work. Very weak babies may require a longer period, with short intervals in which they rest.

The Daily Total of Milk Required.—Most young infants will satisfy their requirements for growth and development when receiving an average of 2½ ounces (75 c.c.) of human milk for each pound (0.45 kg.) of body weight in twenty-four hours. Roughly, this may be stated as one sixth of the body weight in milk daily (50 calories for each pound). Older infants will usually thrive on 2 ounces (60 c.c.), or 42 calories of breast milk for each pound, or one eighth of their weight.

While infants of the same weight and age under the same conditions will require virtually the same amounts to provide for growth and development, on the whole the fat baby will require less for each pound than the thin one.

Heubner thus expresses the needs of breast-fed infants in terms of energy quotient:

> During the first few months, an infant requires 100 calories per kilogram daily of breast milk; after the sixth month the energy quotient gradually comes down to 80 or 85 at the end of the first year. An energy quotient of 70 is the minimum amount that an infant can take without losing weight.

Human milk can be estimated at 21 calories for each ounce, or about 70 calories for each hundred cubic centimeters of milk. With these figures in mind, it is easy to determine whether a breast-fed infant gets the right amount of food. It may well be emphasized that the infant who is making a normal gain should offer little cause for anxiety as to the exact quantity it may be receiving from day to day.

Water Requirements.—When the infant is receiving one sixth of its body weight in milk during the day, little if any additional water is required. When the breast milk does not meet this requirement, additional water and other food must be administered to meet the required one sixth of the body weight in fluids. During the first days of life, when the breast milk supply is insufficient, total fluids should be administered to meet the needs mentioned above. From 1 to 3 ounces (30 to 90 c.c.) of a 2 to 5 per cent. solution of sucrose or lactose which has been boiled may be given to the infant at four hour intervals until the milk appears.

Before the water is given, the infant should be placed at the breast at each feeding. Even when milk is plentiful, the administration of water two or three times daily from a nursing bottle accustoms the infant to taking the food in this way. An infant so trained will meet emergencies of weaning more readily than one unaccustomed to bottle feeding.

Feeding During the First Days.—During the first day of life, food may be withheld for twelve hours, the infant being kept in a warm crib. It usually soon falls asleep, and as a rule it should be awakened only to change diapers. As a rule, the child does not evidence its initial sensation of hunger by crying until after its first half day of life; and even then, in many cases, it is difficult to obtain the cooperation of the infant in administering its food. During the second twelve hours the infant may be put to the breast two or three times in order to stimulate secretion and to teach it to nurse. During the second twenty-four hours the baby should be put to the breast at regular four-hour intervals. The sixth feeding may be omitted. By the third or fourth day the infant will usually receive most of its required food from the breast. If a night feeding is to be instituted, it is well to waken the baby at the regular hour in order to cultivate regular habits, which are so essential to the mother's welfare. The infant should at all times be *taught to take food by the clock.* This means that it should not be nursed before the accustomed hour nor should its feedings be delayed beyond its regular time unless an emergency arises. When the infant either cannot take or does not receive sufficient food on the four-hour nursing period, with five or six nurs-

ings in the day, it should be put on a three-hour period, with seven feedings in twenty-four hours. The average infant can be trained by the second month to wait regularly for its food; and if the milk is of proper quality and of sufficient quantity it will sleep quietly for most of the interval between nursings.

Initial Weight Loss.—An initial weight loss is physiologic, and in the main is due to the loss of water through the skin, lungs and kidneys, and the meconium, by way of the intestinal tract. Necessarily, the weight loss is directly influenced by the amount of fluids ingested. To a certain extent the weight decrease depends on the size of the child, the weight loss, on the whole, being greater in a large infant than in a small one. The decrease usually continues for from two to five days after birth. The average weight loss will range between 8 and 10 per cent. of the body weight. Losses above the latter figure should always lead to careful study of the milk supply and water intake, and usually indicate a necessity for complemental feedings of carbohydrate solutions alone, if the breasts seem of good quality, or of milk mixtures. Schick [5] has found that he can prevent most of this initial weight loss by the feeding of sugar solutions during these first days, giving as high as 1 ounce (30 gm.) of sucrose during the twenty-four hours. More recently it has been found practical to use a 5 or 10 per cent. solution of corn syrup as complemental feeding, the total day's feeding, including the breast milk, averaging one sixth of the infant's body weight.

The Total Nursing Period.—Some mothers will be able to carry on the nursing for only two or three months; others as long as nine months. In outpatient as well as in private practice it is exceptional to find a breast milk supply which is sufficient for the infant after the ninth month. It is usually wise to allow one bottle feeding daily by the end of the third or fourth month in order to relieve the mother and at the same time train the baby in bottle feeding.

Protracted Nursing.—Weaning may be delayed when the infant is passing through the hot months of summer and when the quality of the cow's milk supply is uncertain. It may also be delayed when the infant is convalescing from a recent illness or in the presence of epidemics of acute infectious diseases.

Signs of Successful Nursing.—The normal full-term infant shows a gain of not less than 4 ounces (120 gm.) weekly. This is the minimum weekly gain that may safely be allowed. When a nursing baby remains stationary in weight or makes a gain of only 2 or 3 ounces (60 or 90 gm.) a week, it means that something is wrong, and the defect will usually, but not invariably, be found in the milk supply. When the baby is nursed at proper intervals and the supply of milk is ample and of good quality, it is satisfied at the completion of the nursing. Under 3 months of age it falls asleep after ten or twenty minutes at the breast. When the nursing period again approaches, it becomes restless and unhappy, crying lustily if the nursing is delayed. When the breast is offered, it takes it greedily. The weekly gain in weight under such conditions is usually from 4 to 8 ounces (120 to 240 gm.). At the fifth month the baby will have doubled, and at the twelfth month trebled its birth weight. The average gain for each week during the first year usually approximates 5 ounces.

Stools.—The feces of breast-fed babies are strikingly uniform and are like no other bowel movement in infancy. Normally there are two or three a day, sometimes only one, or, again, more than three. They are soft or mushy, homogeneous, of an egg-yellow or gold color, and have a slightly sour, not at all unpleasant odor. They are never formed and always cling to the diaper. The nature of the bowel movement, and its uniformity, is due to the "physiologic fecal flora" which is brought about by the ingestion of breast milk into the germ-laden intestinal tract. The dominating organisms have a fermentative rather than a putrefactive action on the food. The gases normally formed are carbon dioxid and hydrogen, and these are almost odorless. The acidity of the movement, its softness, and the mechanical action of the gases present, all insure active peristalsis and ready emptying of the bowels, so that true constipation is an exceptional condition in a breast-fed baby, and, if present, nearly always suggests too little food, or abdominal and intestinal muscles too little developed and too weak to force the stool past the anal sphincter. More often the stool is simply retained above the anus, owing to lack of peristalsis sufficient to overcome the anal sphincter. The latter condition is commonly interpreted as constipation by the laity.

The feces of the breast-fed baby are frequently not wholly normal; they quite commonly, especially during the first few months, contain small, soft, white or yellowish fat curds, an excess of mucus, and are often greenish, and may be more frequent than normal. *Such a condition is perfectly consistent with a normal growth and well-being of the baby, and should never in itself be a cause of worry, or an indication for a change of food.* This is a very important point that is commonly neglected. The condition of the bowel movements is only one factor, and in the breast-fed a minor one, in determining a baby's nutrition.

Signs of Unsuccessful Nursing.—The most significant symptoms are a stationary or insufficient gain in weight or losses in weight, fretfulness on the part of the infant while nursing, a tendency to remain for too long a time at the breast, and crying when it is removed from the breast. Small stools composed largely of mucus are usually an indication of insufficient food, especially when only one or two are passed daily. While every effort should be directed toward maintaining the breast-milk supply, it is of equal importance to interpret the symptoms of underfeeding as indications for complemental or supplemental feedings.

Except in the presence of extreme emergency, breast feedings should not be discontinued suddenly. It is always wise to continue as many feedings at the breast as may be warranted by the circumstances in the individual case.

(To be continued)

5. Schick: Ztschr. f. Kinderh. **27**: 57, 1920.

Deaths from Childbirth.—The Department of Commerce announces that provisional figures compiled by the Bureau of the Census show lower death rates of mothers from childbirth or puerperal causes in 1921 than in any year since 1917. Of the twenty-seven states for which figures are available, South Carolina has the highest 1921 death rate from puerperal causes (9.8 per thousand live births) and Connecticut the lowest (5.3). The ratio of deaths from childbirth to the number of women bearing children in the year 1921 was about 1 to 150.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 NORTH DEARBORN STREET - - - CHICAGO, ILL.

Cable Address - - - - "Medic, Chicago"

Subscription price - - - - - - Six dollars per annum in advance

Please send in promptly notice of change of address, giving both old and new; always state whether the change is temporary or permanent. Such notice should mention all journals received from this office. Important information regarding contributions will be found on second advertising page following reading matter.

SATURDAY, JANUARY 13, 1923

PRESENT POSSIBILITIES FOR SPECIFIC CHEMOTHERAPY OF BACTERIAL INFECTIONS

Despite the fact that bacterial infections play a far larger part in human affairs than does invasion by protozoa and other animal parasites, most of the investigative work heretofore done on the possibility of specific chemical disinfection has concerned the latter group of invaders. When we think of specific chemotherapy, we recall malaria and quinin; trypanosomiasis and the several chemicals that destroy the parasites involved; amebic dysentery and emetin; bilharziasis and antimony and potassium tartrate; spirilloses and the arsphenamins; but most of us do not associate successful specific chemotherapy with bacterial infections. Theoretically, at least, we have the right to expect even more ready attack on bacteria than on protozoa, since the former are less closely related to mammalian organisms than the protozoa, and in chemotherapy we are seeking for cell poisons that will select the parasite rather than the host.[1] Up to the present time, however, we have no such successes to record with antibacterial chemotherapy as are contained in the foregoing list; but it is important to recollect that we have not a few positive items that encourage the hope that the day is not far distant when we may have an armamentarium as efficient against some, if not all, bacterial diseases as we now have against so many of the protozoan infections.

In the first place, the spirilloses represent invasions by organisms so closely related to bacteria that their classification with protozoa has been much contested; yet here we find our most remarkable example of a chemical antisepsis specific for a whole group of parasites. When we find an infection with spirillar organisms, we anticipate with confidence a positive therapeutic effect from arsphenamin, even when the diseases are so dissimilar clinically and anatomically as relapsing fever and yaws. Again, we have several demonstrations that chemical antiseptics do exist capable of specifically attacking a definite bacterium. One of the most striking of these is the quinin derivative ethylhydrocuprein, which has a most remarkably specific capacity to destroy the pneumococcus when it has infected an experimental animal. So slight a change in the composition of the complex ethylhydrocuprein molecule as the substitution for its ethyl radical of either a methyl or a propyl radical reduces its efficiency. Although this drug will certainly prevent or cure an otherwise lethal pneumococcus infection of mice, it has not solved the problem of the cure of human pneumonia, probably because in man the curative and toxic doses are too nearly the same. Nevertheless, it has been found of value in the treatment of local pneumococcus infections, such as corneal ulcers, and several reports have appeared of its successful use in pneumococcus meningitis. In the more or less efficient treatment of leprosy by chaulmoogra oil and its derivatives, we have evidence that even so resistant an organism as the acid-fast leprosy bacillus may be attacked by chemical means, thus holding out hope for a similar solution of infection with its more widespread relative, the tubercle bacillus.

Churchman[2] has stimulated much interest and furnished encouragement as to the ultimate possibilities of local sterilization of infected tissues and surfaces. His pioneer demonstration that gentian violet and other related dyes selectively inhibit or kill such bacteria as stain by Gram's method is widely known, and some therapeutic successes have been reported in the sterilization of infected wound surfaces and serous cavities with gentian violet. More recently he has found that a commonly used dye, acid fuchsin, has quite the reverse selectivity of gentian violet, for it acts specifically on bacteria that do not stain by Gram's method. In England, Browning and his co-workers have made important observations on the bactericidal action of certain dyes, particularly such members of the acridin group as the flavines.

Morgenroth, who was for many years associated with Ehrlich in chemotherapeutic investigations, has reported observations on two substances, one a new derivative of quinin, the other a derivative of acridin. These have a marked antiseptic action in tissues infected wtih streptococci and staphylococci. It has been found possible experimentally to infect mice subcutaneously with doses of the pus cocci which produce extensive local phlegmonous suppuration, associated with bacterial invasion of the blood, and then to sterilize both the local infection and the blood by injecting these chemicals into the subcutaneous tissues about the infected area.[3] This complete bacterial sterilization of the mouse may be obtained, it is claimed, even when the infection has been under way for eighteen hours.

1. Schlossberger, H.: Development and Problems of Modern Chemotherapy of Infectious Diseases, New York M. J. **115**: 26 (Jan. 4) 1922.

2. Churchman, J. W.: The Anilin Dyes in Therapeutics, J. A. M. A. **79**: 1657 (Nov. 11) 1922.

3. A lecture by Morgenroth gives a recapitulation of his work in this field: Morgenroth, J.: Ziele und Wege der chemotherapeutischen Antisepsis, Klin. Wchnschr. **1**: 353 (Feb. 18) 1922.

The exact quantitative studies that Morgenroth has carried out on experimental animals cannot well be duplicated in human infections. Nevertheless, German surgeons are beginning to describe a similar efficiency of the acridin derivative in clinical cases. Morgenroth says:

> What yesterday seemed absurd, tomorrow will seem banal. Today it is no longer a question for debate whether or not there can be a prophylactic and curative chemotherapeutic antisepsis, but merely a question of when, where and how. The future of chemotherapeutic antisepsis will probably resemble the present situation in respect to local and general anesthesia, for the future surgeon will inquire in each case whether the antisepsis should be local or be general through the circulation, which antiseptic is to be selected, what concentration and quantity, etc., just as he now does with his anesthetics.

If the foregoing optimistic forecast is true, the logical extension of these conclusions is that other, nonsurgical infections may equally well be overcome by similar methods. Somewhat rash these prophecies, perhaps; but when we consider the undoubted advances made in this field of chemotherapeutics in a few years by a very few workers, we have every right to anticipate much more to come. A larger appreciation of the possibilities of chemical attack on bacterial infections may lead to the expenditure of the quantity of brains and money that are warranted by the importance of the problems and the prospects of invaluable results.

THE QUEST OF POTENTIAL ENERGY

During the nineteenth century, the science of physiology learned the significance of the energy aspects of nutrition. As Lusk [1] has recently reminded us anew, in a delightful review of the history of metabolism, Rubner was the first to solve the problem initiated by Lavoisier, of demonstrating that the law of the conservation of energy held true for the animal organism. The crucial experiments were conducted within the memory of many persons still living. Calorimetry has attained large importance not only in the study of the chemical changes taking place in the organism but also in determining the possible value of food materials as sources of energy. Thus, calories enter into our daily reckonings in various ways in relation to the fuel needs of the human and animal mechanisms as well as the engines of human construction. Indeed, the struggle for existence has been described by a distinguished physicist as essentially a fight for the potential energies of coal, sugar and meat. Mendel [2] has remarked that, in view of the increase of population, it has been a favorite pastime for scientists to calculate the possibilities of the food supply of the future, and to venture phophecies involving the prospect of impending failures. A quarter of a century ago, Sir William Crookes provoked widespread discussion when he forecast the failure of the wheat crop to supply the needs of an increasing population of bread eaters in the present generation. Although his fears have not been entirely justified, there are signs that increase in production cannot go on indefinitely.[2]

Meanwhile, our food resources appear to be threatened from another direction. Man has become an implement-using animal, and has greatly increased his efficiency by employing the power-driven machine. Spohr [3] has presented this disconcerting picture:

> The source of energy which drives these machines is not a steady stream: it is being drawn from the accumulation of centuries. A year's consumption of coal at the present rate represents the accumulation of hundreds of years. The power of man to do work, physical work, the unit one-man power, is now an almost insignificant factor. A return to such a physical standard would almost certainly follow the failure of such sources of energy as man now has at his disposal. The quest of these sources of energy, coal and oil, is at present being pushed with a feverish intensity that has never been known before, and the competition for the possession of these stores recognizes no principles. The destiny of civilization is guided by and reflects the amount of available energy. When coal and oil are exhausted, the daily ration of solar energy will represent almost the entire means of livelihood; our mushroom civilization must pass like the historic empires of the past, and we may expect the reappearance in the world once more of galley slaves and serfs.

Through its truly remarkable property of photosynthesis, the plant is enabled to capture the solar energy and store it in the form of organic constituents. These may serve not only as food fuel for man, but also as fuel sources for the industrial world. Wood may replace coal; and alcohol produced by fermentation from the carbohydrates of plants may supplant petroleum in our heat engines. But the photosynthetic capacities of forestry and agriculture are limited, at best. Organic nature is wasteful. Out of hundreds of units of energy represented in solar radiation on a wheat field, for example, scarcely a single unit can be stored in a growing season. Boyd [4] has calculated that, if the entire corn crop of the United States produced by an acreage more than four times the total area of the state of Ohio were diverted to produce alcohol for fuel purposes, its heating value would scarcely exceed that of the present gasoline production of this country.

Obviously, if this is correct, we cannot afford to divert our indispensable food resources in the form of farm crops to motor fuel production. This brings us face to face with the scientific problem of rivaling nature in harnessing solar energy for the industrial uses which threaten to compete with man's needs of food fuel. As Spohr has remarked, it is the duty of the scientist to learn the precise manner in which this is accomplished. He need not be timid about competing with nature. He has many cases to his credit of surpassing the processes of nature both in efficiency and in reliability. There are many substances now effec-

1. Lusk, Graham: A History of Metabolism, in Endocrinology and Metabolism, 1922, p. 75.
2. Mendel, L. B.: Changes in the Food Supply and Their Relation to Nutrition, Yale University Press.
3. Spohr, H. A.: Photosynthesis and the Possible Use of Solar Energy, J. Indust. & Engin. Chem. **14**: 1142 (Dec.) 1922.
4. Boyd: Motor Fuel from Vegetation, J. Indust. & Engin. Chem. **13**: 836, 1922.

tively produced artificially that were formerly obtainable only from plants or animals. The physician is daily called on to correct or improve on nature. He does so when he corrects vision with glasses or increases the immunity factors in the blood so that man becomes more resistant to disease. Why should man hesitate to meet the problem of utilizing energy in order to promote his efficiency, if not actually to accomplish self-preservation?

DOES SCHOOL WORK IMPAIR HEALTH?

Many events in connection with human life are determined on a chronological basis solely with respect to the age of the individual concerned. In at least two of these it must seem somewhat strange, on careful consideration, to find that chronological rather than physiologic age has so often been made the basis for features of great importance in human experience. In many states the law carefully defines the age below which children may not leave school to engage in wage-earning labor. Thus, the problem of child labor is settled, in practice, on the basis of age, without necessary reference to the biologic or other fitness of the young worker concerned. The minimal standards for children entering employment, as formulated in a report [1] of the Children's Bureau Conferences in 1919, refers frequently to minimal ages for a variety of employment demanding varying degrees of physical endurance and skill. Everywhere one reads of an age minimum, although a novel addendum is found in the suggestion that a child shall not be allowed to go to work until he has had a physical examination by a public health physician and has been found to be of normal development for a person of his age, and physically fit for the work at which he is to be employed. It will mark a great step in advance when fitness to engage in manual labor or in other sorts of tasks at the end of a normal school life shall be based on the physiologic and mental equipment of the person concerned, as much as on the number of years that have elapsed since his birth.

A second event in which, all too often, years rather than physique and personality seem to be principles guiding to decision, involves the time in life at which children should begin their school work. We have no desire to enter into the debate as to when the preschool days should end. Certain facts in reference to the arguments often advanced deserve, however, to be known. It is frequently stated that the acceleration of the educational process through school attendance may in the long run be detrimental rather than otherwise. In other words, this concerns the question whether it would be better for the health of most children if they were not sent to school when the law says they are old enough to go, but were kept out until they are older. As the views entertained by both physicians and educators have usually represented personal opinions based on unsubstantiated impressions or chance observations, the U. S. Public Health Service [2] has conducted investigations bearing directly on the subject. A study of the schoolchildren in a typical American community has shown that the work of the elementary grades had little, if any, adverse effect on the pupils' weight. Of the children who entered the schools up to the standard of weight in the fall, remarkably few were underweight in March. This was observed entirely irrespective of the age of the pupil, the underage child making as good a showing as the normal age or overage child. Sterling [2] concludes that parents need not hesitate to send a healthy child to school at the age of 6, which was the entrance age of the school studied. When the investigator regards it as plain that school life, apart from detrimental influences which may exist in the home environment, is not ordinarily a menace to the child's state of nutrition, good sense seems to be adequately supported by a critical inspection of existing school conditions. Such justified generalizations cannot fail to be a helpful guide to him who may be the chief guide and counselor as well as physician in many families.

1. Standards of Child Welfare, Conference Series 1, Publication 60, Children's Bureau, U. S. Dept. Labor, 1919.

EXPERIMENTAL ASCARIASIS IN MAN

Until recently the life history of the eelworm, *Ascaris lumbricoides,* in man was believed to involve no intermediate host, and was usually stated to indicate a comparatively uncomplicated sojourn in the organism. The assumption was that when the developed eggs are swallowed, either in contaminated food or in water, or from hands soiled with dirt containing the eggs, the embryo develops directly to the adult stage.[3] The habitat of the parasite in its various stages of development was supposed to be the alimentary tract, although an occasional wandering of the worms was recognized as a dangerous aspect of ascariasis. Stiles,[3] in his elaborate review of the subject in 1907, mentioned that the escape of erratic eelworms by the mouth or nose is not very rare, and he regarded this aspect of the infections as particularly indicative of the importance of prophylactic treatment.

Through the more recent investigations of Stewart,[4] it has become probable that *Ascaris* cannot develop continuously and directly in the intestine of the host. The evidence secured in experiments on animals indicates that the larvae can and often do penetrate the intestinal wall, ultimately finding their way to the lungs. From there it is a short step for them to reach the esophagus and thus be returned to the intestine. The larvae have actually been found in many parts of the body. Ransom and Foster [5] of the Bureau of Animal

2 Sterling, E. Blanche: Nutrition and Education, Pub. Health Rep. **37**: 2798 (Nov. 10) 1922.

3. Stiles, C. W.: The Zoo-Parasitic Diseases of Man, Osler's Modern Medicine **1**: 596, 1907.

4. Stewart, F. H.: On the Life History of Ascaris Lumbricoides, Parasitology **10**: 197, 1918; **11**: 385, 1919; **13**: 37, 1920.

5. Ransom, B. H., and Foster, W. D.: Observations on the Life History of Ascaris Lumbricoides, Bull. 817, U. S. Dept. Agric., 1920.

Industry are in substantial accord with Stewart in respect to the erratic path of the parasites in the body. Newly hatched larvae may be eliminated in the feces; others may penetrate the intestine and go to the liver and lungs and occasionally other organs, including the abdominal cavity. The pathway from the alimentary canal has been debated; but the most cogent evidence points to the veins and pulmonary artery as the route, although a small proportion of the migrating larvae may travel by the lymph stream or perforate the diaphragm from the abdominal cavity.

The outstanding fact in the recent studies is the early appearance of larvae in the lungs, and the small numbers in remote organs such as the spleen and kidneys, in experimentally infested animals. The indication that something similar occurs in human cases of ascariasis is afforded by the somewhat heroic experiments of Koino [6] of Tokyo on men. After he himself had swallowed two thousand mature eggs of *Ascaris lumbricoides*—the human parasite—and another person had ingested the eggs of the pig ascaris, *Ascaris suilla*, symptoms attributable to larval migrations as in experimental animals occurred in both cases. There were headaches, fever, respiratory difficulties and other untoward results. Pneumonia ensued, and larvae were found in the sputum. The human host proved to be unfavorable for the pig parasite. These facts, though they afford evidence far more indirect and circumstantial than the more carefully controllable studies on man, serve, nevertheless, to fix attention anew on the dangers from *Ascaris* migration in the body.

6. Koino, S.: Experimental Infections on Human Body with Ascarides, Japan Med. World 2: 317 (Nov. 15) 1922.

Current Comment

THE DURATION OF BREAST MILK FEEDINGS

The artificial feeding of infants, and particularly so-called bottle feeding, is essentially an imitation of the procedure whereby the nursling secures its supply of food at the mother's breast. If the period of nursing is made too brief, the resulting inability to secure sufficient nutriment must be obvious. How long, on the other hand, it may be wise or advantageous to permit the nursling to remain at the breast is not so readily answered in definite terms. It is taking, perhaps, a somewhat unhumanitarian or unideal point of view to estimate the loss of time which unnecessary devotion to such feeding may represent on the part of the mother; nevertheless, the total may actually amount to hours rather than a few minutes in the course of a day. To the wage earner or the head of a large household, this is not an entirely insignificant consideration. But there is also the question as to whether undue prolongation of the act of nursing may not be a positive detriment rather than merely a matter of indifference with respect to the welfare of the infant itself. There is a widely observed tradition that twenty minutes is the "proper" duration for each feeding. It may come as a surprise to many, therefore, to learn the results of a large number of actual determinations recently made at the Department of Diseases of Children of Columbia University, New York, by Smith and Merritt.[1] Through successive weighing of nursing infants, it was ascertained that they obtain the greater part of their feeding of breast milk in the first few minutes—from 40 to 60 per cent. in the first two minutes, and from 60 to 85 per cent. in the first four minutes. This holds true whether the supply is abundant, moderate or scanty. After eight minutes, very few babies get any milk whatever. Most pediatricians are agreed that prolonged feeding is undesirable for babies for several reasons; it is also not desirable for the mothers. The findings just referred to warrant the general conclusion that a normal baby that gets enough milk from one breast needs to nurse, as a rule, only from six to eight minutes; rarely from ten to twelve minutes. Smith and Merritt go a step further in their conclusion with the advice that, if the baby empties the breast in from five to eight minutes and shows no signs of discomfort from an adequate feeding obtained in that time, there seems to be no good reason why he should not take his bottle in about the same time. The reign of economy seems to be including the daily routine of man from the earliest days of his infancy.

EARLY SILICOSIS AND EARLY TUBERCULOSIS

If Paracelsus and Ramazzini had been pathologists, pulmonary disease associated with the inhalation of dust would have assumed importance generations ago, for they were the first to describe the condition now known as pneumonoconiosis. As it was, the pathology of the condition was unrecognized by the early writers, and at the time of Laënnec was confused with that of pulmonary tuberculosis. About 1825, Alison drew attention to certain similarities and differences between these diseases, and opened a discussion as to their intimate relation which has never entirely closed. In view of recent investigation, the fundamental changes arising from the inhalation of dust should be more generally recognized. When any sort of dust enters the lung, a host of wandering cells appears in the alveoli and takes up the dust particles. Then, or later, many of the laden "dust-cells" escape through the air passages without doing harm, but others fail to escape. Dust-cells which remain in the lung ordinarily survive only a short time. They are carried off by the lymphatics, they are autolyzed, or they undergo digestion by the tissue juices, leaving their loads of dust in situ. Coal dust, for example, to which an animal had been exposed some weeks before, was found [2] lying on the outer surface of the blood vessels where it could readily escape into the air tubes. In such cases elimination follows fairly closely on the heels of invasion, and the injury is slight. With some other dusts, however, among which silica is the most striking example, definite, marked pathologic changes occur whose extent depends on the

1. Smith, C. H., and Merritt, K. K.: The Rate of Secretion of Breast Milk, Am. J. Dis. Child. 24: 413 (Nov.) 1922.
2. Mavrogordato, A.: Studies in Experimental Silicosis and Other Pneumonoconioses, Publications of the South African Institute for Medical Research, March, 1922.

quantity and quality of dust inhaled. Silica preserves, so to speak, the dust-cells which pick it up, prevents their autolysis or digestion in the lymph, and thus causes their accumulation in the lymph channels, which they eventually fill up and block. Behaving now somewhat as foreign bodies in the lymphatics, fibrotic changes occur in which the cells themselves merge into fixed connective tissue cells and ultimately coarse white fibers, and thus completely and perhaps permanently obstruct the lymph channel. When the affected lymphatics are perivascular, the fibrosis continues until the blood vessel itself is converted into a solid rod of fibrous tissue. Although all dusts tend to "drift" toward the visceral pleura, cells laden with silica differ from some others in collecting there in bunches, which, to the bacteriologist, at least, suggest a positive Widal agglutination. Mavrogordato terms these aggregations of dust-filled cells "pseudo-tubercles," since the method of formation and the cells concerned are the same as in the true tubercle. It is in these bodies that silicotic fibrosis first arises, and their presence on the visceral pleura is one of the earliest changes found at necropsy. There are thus three stages in the development of simple silicosis: (1) the provocation of "dust-cells"; (2) the accumulation of these cells in the lymphatics and their collection into "pseudo-tubercles," and (3) the fibrosis of obstructed lymphatics and of pseudo-tubercles. The early lesions of silicosis and pulmonary tuberculosis are much alike. The difficulty of differentiating them may be insurmountable. It is important, however, to realize that silica alone, without the association of the tubercle bacillus or other infective agent, can produce all the early stages of a pulmonary disease so similar to early tuberculosis.

Association News

THE SAN FRANCISCO SESSION

Applications for Space in Scientific Exhibit and for Time on Motion Picture Theater Program

Plans are under way for the Scientific Exhibit to be held at the San Francisco session of the American Medical Association. Application blanks for either exhibit space or time on the Motion Picture Theater Program will be ready, March 1. Those desiring application blanks should forward their names and addresses to Director Scientific Exhibit, American Medical Association, 535 North Dearborn Street, Chicago.

American Medical Association Eastern District Official Tour to San Francisco

The annual session of the American Medical Association will be held at San Francisco, June 25-29, 1923. The subcommittee appointed by the secretaries of the medical societies of the Eastern states has arranged a twenty-five day tour to San Francisco and return, stopping at interesting and important points. All details of the trip will be taken care of, and all arrangements made by an experienced tourist representative, who will accompany the party and take entire charge of the tour. In order to make this tour a success, and to have a special train with all conveniences, including diners, special Pullmans and baggage car, it will be necessary to have at least 125 Fellows subscribe to the tour. The state medical societies of the Eastern states and of some of the Middle states have appointed, as a subcommittee to arrange for the tour, Drs. Edward Livingston Hunt, Wilbur Ward and Malcolm C. Rose.

The committee extends to all who contemplate attending the annual session a cordial invitation to join the tour, further details of which will be published later.

EDWARD LIVINGSTON HUNT, M.D.,
17 West Forty-Third Street,
New York City.

Secretary, Medical Society of the State of New York.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

County Health Units.—There will soon be a complete chain of health units across the northern counties of Alabama, it was announced recently. Limestone County has appropriated $5,000 for a full-time health officer and health unit, and when Jackson County makes a similar appropriation, which it now proposes to do, it will complete the chain.

ARKANSAS

Personal.—Dr. C. A. Williams, El Dorado, has been appointed full-time health officer to succeed Dr. S. J. McGraw, who recently resigned as head of the health board.

CALIFORNIA

Medical School Gets Higher Rating.—The College of Medical Evangelists, Los Angeles, has recently been granted a rating in Class A by the Council on Medical Education and Hospitals of the American Medical Association.

Former University President Dies.—Prof. William Thomas Reid, president of the University of California in 1881, died, December 18, in Berkeley, reports state. Dr. Reid was a graduate of Harvard University and received his LL.D. from the University of California.

Los Angeles Officers Elected.—At the annual meeting of the Los Angeles County Medical Association the following officers were elected for 1923: president, Dr. William H. Gilbert; vice president, Dr. Joseph K. Swindt, and secretary-treasurer, Dr. Harlan Shoemaker. An address was given by Dr. Donald J. Frick, the retiring president.

Popular Medical Lectures.—Stanford University Medical School announces the forty-first course of popular medical lectures, to be given at Lane Hall, beginning January 12. The first lecture was given by Dr. Philip King Brown on "Building Up Resistance to Disease: An Individual and Community Problem." January 26, Dr. Lewis M. Terman will speak on "Gifted Children." Mr. Astredo of the juvenile court will speak on the "Problem of the Delinquent Child," February 9. "Care of the Dependent Child" will be Miss Felton's subject, February 23. The fifth lecture will be delivered by Guy S. Millberry, D.D.S., March 9, on "Modern Views on Dental Hygiene in Childhood," and the sixth and final lecture will be given, March 23, by Dr. William C. Hassler, health officer of San Francisco, on "San Francisco's Health Program for Children: The Medical Aspects."

COLORADO

Dr. Powers Leaves Legacy to Medicine.—Dr. Charles Powers, who died suddenly, December 23, in the University Club, Denver, left a large part of his estate for the advancement of surgery and medicine. The income from $3,000 he left in trust for the Medical Society of the City and County of Denver, for the purchase of medical books and journals for the library. All of his books, instruments and pictures he bequeathed to the International Trust Company for distribution as deemed advisable. The remainder of the estate was left in trust, one half the income, on the death of his step-father, to go to the Children's Hospital of Denver; the other half of the income from the trust funds, on the death of Miss Hurd, a former secretary, to be paid to the trustees

of the New York Academy of Medicine of New York City, one half the income therefrom for the purchase of books on surgery and anatomy, and the other half to be devoted to the expenses of an annual lecture course "which shall embody results of original research in the department of surgery and surgical pathology, the lectures to be selected by the president of the academy, the senior professor of surgery, and the senior professor of medicine for the time being of the College of Physicians and Surgeons of New York."

DELAWARE

County Medical Meeting.—At the annual meeting of the New Castle County Medical Society at Wilmington, December 19, the following officers were elected: president, Dr. William E. Bird; vice president, Dr. William O. Lamotte, and secretary-treasurer, Dr. Charles P. White (reelected).

ILLINOIS

Conference on Sanitation.—The chief sanitary engineer of the department of public health recently met with the officers of the Fox River and Lakes Improvement Association, to complete plans for making the waters of the upper Fox River and Lakes safe for bathing purposes. Property owners concerned and members of the association will be advised to comply with sanitary regulations recommended by the department.

Diphtheria Closes Schools.—The Highland Park health commissioner has ordered restrictions placed on the movements of all children below the age of 14 years, and all grade schools closed, following the development of more than twenty-five cases of diphtheria during the last few days. High school classes will also be suspended, and policemen have been stationed at skating rinks and moving picture theaters to keep out all children under 14, in an effort to prevent the spread of the disease.

Infant Welfare Stations Established.—New infant welfare stations were opened during December at Freeport, Wilmington and Steger. At Freeport, the station will be maintained by the Amity Society, the clinics being conducted by Dr. J. A. Poling, city health officer. At Wilmington and Steger, the centers were established through the efforts of the county nurse and superintendent of schools, and the clinics will be conducted by members of the local medical societies. Dr. Elizabeth B. Ball, pediatrician, attached to the state department of public health, directed the opening of the station and the first clinic at each place, her services having been requested by the local agencies concerned.

County Medical Meetings.—Drs. Charles M. Doty and Christian H. Diehl were elected president and secretary, respectively, of the Effingham County Medical Society at the annual meeting.——Will County Medical Society elected Dr. Earl R. Steen president for 1923, and Dr. Edwin R. Talbot was reelected secretary.——At the annual meeting of the Morgan County Medical Society, Dr. Thomas G. McLin was elected president and Dr. Ellsworth Black, secretary.——Dr. Warren W. Murfin of Patoka was elected president of the Marion County Medical Society, December 15, and Dr. John E. Schoonover, Salem, secretary-treasurer.——Dr. William K. Farley, Fulton, has been elected president of the Whiteside County Medical Society.

Chicago

Banquet for Senator Copeland.—Chicago physicians gave a banquet in honor of Dr. Royal S. Copeland, health commissioner of New York City, January 9, at the Chicago Athletic Club. Dr. P. J. H. Farrell was toastmaster. Dr. Copeland spoke on the immigration peril and advocated examination on the other side—moral, mental and physical—and allocation, so far as possible, according to industrial or professional preparation. Dr. Charles E. Humiston, former president of the Illinois State Medical Society, and Dr. John Dill Robertson, formerly city health commissioner, also gave addresses.

Personal.—Dr. Joseph L. Miller, Rush Medical College, spoke on "Protein Metabolism" before the Elgin Physicians' Club, Elgin, December 18.——Dr. Duncan D. Campbell, on the staff of the Chicago State Hospital, has been appointed by the Missouri State Eleemosynary Board as superintendent of Hospital No. 2, St. Joseph, Mo., to succeed Dr. Aden C. Vickrey, who recently resigned.——Dr. Edwin Bruce Godfrey, Chicago, formerly city physician of Springfield, sailed, December 25, for Greece, where he will take charge of the American Red Cross work. Dr. Godfrey served during the World War in France with the rank of major in the American Expeditionary Forces.——Dr. Charles E. Galloway sailed, December 16, for Cherbourg and Southampton, on the White Star liner *Majestic*.

INDIANA

Dinner for Amos Butler.—The friends of Amos W. Butler, secretary of the Indiana Board of Charities, gave a dinner for him, December 2, on the completion of twenty-five years of service as secretary and manager. Governor McCray spoke of the splendid work of Mr. Butler.

Methodist Medical Meeting.—The research society of the Methodist Hospital, Indianapolis, gave a dinner for Dr. Samuel A. Levine of Boston, at the Columbia Club, December 1. Following the dinner, Dr. Levine gave an address on "Diagnosis and Treatment of Heart Lesions." Dr. Charles P. Emerson also gave a dinner for Dr. Levine.

IOWA

Large Gifts for Iowa University.—President Jessup of the State University of Iowa College of Medicine announced, December 27, two gifts of $1,125,000 each to the college, one from the General Education Board and one from the Rockefeller Foundation. The money will be used to erect and equip a new hospital and laboratory, it was announced. At its next session, the state legislature will be asked to appropriate $450,000 annually for the next five years to equal the gifts of the two foundations. As soon as the legislature accepts the plan, construction work will be commenced on the new buildings, for which sketches and estimates have already been prepared. The buildings will be erected on the west bluff of the Iowa River, facing the old capitol building.

MAINE

Kennebec County Medical Society.—At the annual meeting of the society in Augusta, December 29, Dr. Kendall urged closer cooperation between local and private health groups and the Maine State Public Health Association. Officers elected for 1923 were as follows: president, Dr. Ralph L. Reynolds, Waterville; vice president, Dr. Silas O. Clason, Gardiner, and secretary-treasurer, Dr. Herbert W. Hall, Augusta.

MARYLAND

Board of Mental Hygiene.—This board, which took the place of the state lunacy commission, January 1, under the state reorganization plan, has announced the following appointments made by Governor Ritchie: Drs. Hugh H. Young, George H. Hocking, Henry J. Berkley and J. Albert Chatard, all of whom were members of the old lunacy commission. In addition, H. Findlay Finch and Mrs. Athey have been appointed. The board will meet this month and will recommend the appointment of a commissioner of mental hygiene.

Personal.—Dr. Benjamin C. Perry, Bethesda, has been appointed a member of the state board of health, his term expiring in May, 1928. Dr. Perry is president of the board of county commissioners of Montgomery County.——Dr. William H. Welch, director of the School of Hygiene and Public Health, Johns Hopkins University, Baltimore, and Dr. A. W. Freeman, resident lecturer on public health administration at the School of Hygiene and Public Health, will address a public health meeting at Catonsville, January 18.——Dr. Edward H. Hume, dean and professor of medicine at Hunan-Yale College of Medicine, Changsha, China, gave a lecture at Johns Hopkins University, January 4, on "China and America Today," in which he pictured conditions in China as both "discouraging and hopeful."

Johns Hopkins University News.—Plans for a new chemical laboratory for the Johns Hopkins University, to be located at Homewood, at a cost of about $600,000, have been completed. The details of the building have not been made public, but it is known that the type of architecture will conform to the colonial style of the Homewood group. Action to hasten the construction of the new laboratory has been influenced largely by present housing facilities of the chemical department. As soon as the board of trustees makes the proper authorization, bids will be placed.——Bids also for contracts for the new $1,000,000 home of the Johns Hopkins School of Hygiene and Public Health, which will be located at Monument and Wolfe streets, as a part of the hospital group, will shortly be asked. Plans have already been completed, and final revision of specifications is being rushed.

This structure will be of Italian architecture of brick and stone, and is provided through a donation to the school by the Rockefeller Foundation.

MICHIGAN

Each Prison to Have Full-Time Physician.—A new plan for medical and surgical service in the state penal institutions, under which a full-time resident physician will be assigned to each prison, will become effective shortly, it has been announced by Dr. R. M. Olin, state health commissioner. Dr. Russell L. Finch, Ann Arbor, has been appointed resident physician to the Marquette Prison, to succeed Dr. Harold B. Markham, who formerly did the work in addition to caring for his private practice.

County Elections.—At the annual meeting of the Muskegon County Medical Society, recently, Dr. Samuel A. Jackson was elected president; Dr. Albertus B. Poppen, vice president, and Dr. Fred N. Morfold, secretary-treasurer.——Dr. Daniel G. Castell was elected president, and Dr. Frederick A. Baker, secretary of the Oakland County Medical Society at the annual meeting in Pontiac.——Berrien County Medical Society elected Dr. Alvan A. Rosenberry, Benton Harbor, president, and Dr. Ralph B. Howard, Benton Harbor, secretary, of the society for 1923.

MINNESOTA

Medical Men Plan Law for Practitioners.—Physicians, chiropractors, osteopaths and practitioners of all other systems of healing, except mental and spiritual healing, will have to submit evidence of adequate training in anatomy, chemistry, pathology and physiology in order to obtain admission to examinations for licenses to practice their respective callings in Minnesota, if a law proposed by the Minnesota State Medical Association is enacted. The standard of fitness will be the same for all. Fitness must be demonstrated ordinarily by examinations, but evidence of having passed examinations before certain examining boards outside of Minnesota may be accepted. A new board, to be known as the State Board of Examiners in the Basic Sciences, will be charged with the execution of the law, and no licensing board may admit any candidate to its examinations, or license any candidate by reciprocity or in any other way, unless he has presented a certificate of fitness issued by the Board of Examiners in the Basic Sciences. It is to be optional with the licensing boards whether they will or will not accept such certificates as evidence of qualification in anatomy, chemistry, pathology and physiology, in lieu of examinations conducted by the licensing boards themselves.

MISSOURI

St. Louis Medical Society.—At the annual meeting of the society, January 2, held under the presidency of Dr. William W. Graves, the following officers were elected for 1923: president, Dr. William H. Vogt; vice presidents, Drs. Horace W. Soper and Robert F. Hyland, and secretary, Dr. Thomas Noxon Toomey.

Personal.—Dr. Jacob J. Singer, St. Louis, has been appointed consultant in diseases of the chest at the State Sanatorium, Mount Vernon.——Dr. R. T. Terry, professor of anatomy, Washington University School of Medicine, St. Louis, was elected secretary for the anthropologic section of the American Association for the Advancement of Science, at a meeting held, Dec. 29, 1922.

Honor for Dr. Opie.—The National Tuberculosis Association, after careful study of all research work being carried on in that field of work, has assigned first rank to the investigations of Dr. Eugene L. Opie, professor of pathology in the school of medicine, Washington University, St. Louis, and in recognition of his work has awarded him a grant of $3,000 for the twelve months beginning Nov. 1, 1922, for the further prosecution of his researches.

NEBRASKA

Personal.—Dr. Henry J. Lehnhoff, Lincoln, has been reappointed a member of the educational examining board in medicine.——Dr. Stuart A. Campbell, Norfolk, has recently returned from the Augustana Hospital, Chicago, where he underwent an operation for caries of the maxillae.

County Societies Elect Officers.—At the annual meeting of the Phelps County Medical Society at Holdrege, December 12, Dr. Guy W. Clark, Bertrand, was elected president and Dr. Jay A. Magill, Holdrege, was elected secretary of the society.——Drs. David D. Stonecypher, Peru, and Isaiah W. Irvin, Auburn, were elected president and secretary-treasurer, respectively, of the Nemaha County Medical Society at the annual meeting, December 13.

NEW YORK

To Honor Memory of Physician.—The Taxpayers Association of Canarsie have requested that the place be named "Estabrook" in honor of the late Dr. Curtis G. Estabrook, who died, January 1.

Graduates Hold Reunion.—A reunion of the class of 1919 was recently held at Long Island College Hospital, Brooklyn. Dr. James Egbert, president of the Long Island College Hospital; Dr. Frank D. Jennings, president of the Kings County Medical Society, and Drs. John O. Polak and William A. Jewett, were among the speakers.

Typhoid in Queens Village.—An outbreak of typhoid fever in Queens Village, Queens County, in which twenty-seven cases have been reported and two deaths have occurred, has been traced to a confectionery store near the public school. Thirteen children who attend the school and several adults in the neighborhood are victims, and it is believed that the epidemic was caused by ice cream served at a recent festival in the school. The store that sold the ice cream has been closed.

Formation of New Society.—The Eastern New York Eye, Ear, Nose and Throat Association was recently organized by men interested in these specialties in Troy, Albany and Schenectady, in order that mutual interchange of subjects might be made. Meetings will be held the third Wednesday of each month, alternately in the different cities. The following officers were elected: president, Dr. Eugene E. Hinman, Albany; vice president, Dr. John J. O'Brien, Schenectady, and secretary-treasurer, Dr. Frank M. Sulzman, Troy.

Chiropractor Fined.—Mrs. Stella Kubista, whose license as a midwife was revoked for illegal practices by the state department of health, and now a chiropractor, was placed on trial, November 29, at Buffalo, on the charge of performing illegal operations on a number of girls. After selection of the jury she pleaded guilty to the charge of assault in the second degree. Judge Dudley fined her $500, and sentenced her to serve from two and one half to five years in Auburn Prison, sentence suspended during good behavior. The district attorney's office and the health department are cooperating in stamping out this practice, and only recently two women were sentenced to Auburn for terms of from ten to fifteen years.

New York City

Harvey Society Lecture.—The fifth Harvey Society lecture will be delivered by Dr. Bela Schick, professor of pediatrics, University of Vienna, at the New York Academy of Medicine, January 27. His subject will be "The Prevention of Diphtheria."

Bronx Officers Elected.—At the annual meeting of the Bronx County Medical Society Dr. Joshua H. Leiner was elected president; Drs. Edward C. Podvin and Simon M. Jacobs, vice presidents; Dr. Isadore J. Landsman, secretary, and Dr. Jacob Adlair Keller, treasurer.

Health Exhibition.—The educational health exhibition held last year at the Grand Central Palace will be held there again, January 22-25, as a part of the campaign of the health department to make New York a healthy city. Each day will have a special feature, and every city department will help to make these features both interesting and instructive.

Establish Nurses' Training in France.—At a meeting of the American Committee for Devastated France, recently held in this city, it was announced that the first adequate and modern training school for nurses has been established in France. The committee will assume charge of this work for several years to come, not only because of France's inability to finance the work, but also because public health nursing is not well established in France, and teachers are few.

City Death Rate for 1922.—The number of deaths in New York City in 1922 increased by 5,432 over those in 1921, and there was a decrease of 4,557 births and 2,654 marriages. During the year, there were 69,689 deaths reported, with a rate of 11.93 per thousand of the population, as compared with a rate of 11.17 in 1921. This increase in the number of deaths is due to two severe epidemics of measles in the early part of last year and to the reappearance of influenza.

There were 129 deaths from typhoid fever, as compared with 123 in 1921. To influenza were attributed 869 deaths, compared with 384 for the preceding year. There were 5,944 deaths attributed to cancer, as compared with 5,573, an increase of 371. The number of deaths from nephritis increased by 343, and deaths from accidental causes increased 189. There were 337 homicides, as compared with 303 for 1921. There was an increase of 1,174 in deaths of children under 5 years of age. The number of deaths from measles was 976, as compared with 165 for 1921. The greatest increase was among the respiratory diseases, there being an increase from pneumonia alone of 2,317 over the number of deaths from that cause during the preceding year. Organic heart diseases also showed an increase.

OHIO

Cleveland Academy of Medicine.—At the annual meeting of the academy, the following officers were elected for the ensuing year: president, Dr. Clyde L. Cummer; president-elect, Dr. J. E. Tuckerman; vice president, Dr. Marion A. Blankenhorn, and secretary-treasurer, Dr. Harry V. Paryzek. In addition, the council will include Dr. Lester Taylor, formerly secretary-treasurer, and Dr. John Philips, ex-president.

Health Legislation Asked.—The special legislative bulletin of the Ohio Public Health Association recently issued outlines the legislative efforts which will be made by the association this year. A proposal will be made to amend the administrative code relative to the method of appointment of the director of health; there will be opposition to any attempt to amend the Hughes-Griswold local health law which does not strengthen the present health administration; more adequate state provision for promotion of mental hygiene will be advocated, and there will be opposition to any proposals which seek to weaken the state medical practice act.

OKLAHOMA

Annual Medical Meeting.—The annual banquet of the Logan County Medical Society was held in Guthrie, December 20. Following the banquet, Dr. Charles B. Barker was elected president of the society for 1923; Dr. Henry W. Larkin, vice president, and Dr. John L. Houseworth, secretary-treasurer.

OREGON

Former Dean is Honored.—At the annual banquet of past presidents of the Portland City and County Medical Society, December 20, an oil painting of Dr. Simeon E. Josephi, first president of the society (1884) and first dean of the University of Oregon Medical School, Portland, was presented to the members. The donor was Dr. J. Guy Strohm, president of the society. The portrait will be hung in the proposed new building of the medical school on Marquam Hill. Dr. W. T. Williamson made the presentation speech, and Dr. Richard B. Dillehunt, dean of the medical school, responded. Dr. Josephi spoke of the organization of the university medical school in 1887, in a small shack, and of his work as dean of the school for twenty-five years. Following the banquet, officers of the medical society were elected for the ensuing year as follows: president, Dr. George Parrish, city health officer of Portland; vice president, Dr. Calvin S. White; secretary, Dr. Harold C. Bean, and treasurer, Dr. Kittie Plummer, both the latter being reelected.

PENNSYLVANIA

Personal.—Dr. Francis Victor Laurent, Pittsburgh, who recently returned from a trip devoted to the study of the effect of climate on the organs of respiration, in which he traveled 30,000 miles by land, sea and air, in Europe, Africa and Asia, will leave this month on another voyage for research in the waters around South America.

Society Banquets.—The annual banquet of the Lancaster City and County Medical Society was held, January 3. Officers elected for 1923 previous to the banquet were: president, Dr. H. C. Kinzer, and secretary-treasurer, Dr. Charles P. Stahr.——The annual banquet of the Berks County Medical Society was held in Reading, January 9. Drs. Dorsett, Beardsley, Rugh, Burr and McCrae gave addresses.

Entire Health Board Ousted.—The board of health of East Pittsburgh has been discharged and a new board appointed by Chairman of Council Carrigan, as a result of a report by the health and garbage committee that insanitary conditions which existed at a dwelling had remained unremedied, notwithstanding complaints to the board. A motion was adopted to discharge the board and the chairman of council appointed Drs. Louis Weiss, Albert R. Trevaskis, John E. Newhouse, J. H. Lanigan and D. C. Mahoney on the new board. Drs. Trevaskis and Newhouse were members of the discharged board.

Philadelphia

France Honors Physicians.—At a luncheon given by Dr. Etienne Burnet, special representative of the French republic, January 3, in Philadelphia, Dr. Charles E. Sajous was made an officer of the French Legion of Honor, and Drs. James M. Anders and Francis X. Dercum, chevaliers of the Legion of Honor.

Philadelphia Clinical Association.—At the annual meeting of the association, recently, Dr. Charles S. Barnes was elected president; Drs. Louis H. Jacob and Frederick C. Hutton, vice presidents; Dr. William Hersey Thomas, treasurer, and Dr. James F. Donnelly, secretary.

Philadelphia Death Rate Higher.—The death rate in the city for 1922 was higher than that of the preceding year, while the birth rate, as recorded, was smaller according to the state department of health. It is stated that physicians have been negligent in recording births, as a canvass by nurses in the department in one section of the city brought to light 400 unregistered births. This condition has caused the health director to file complaint with the state authorities. The total of deaths from all causes was 24,990, an increase of 1,286 over 1921. There was a drop of nearly 3,000 in the number of births. Deaths from vehicular accidents of all kinds during 1922 totaled 289. The number of persons injured was 8,413. Saturday and Sunday are not included in these tabulations.

SOUTH CAROLINA

Personal.—Dr. Bayliss H. Earle, Greenville, retired surgeon, U. S. Public Health Service, has been appointed health officer of the county to succeed Dr. Eugene O. Chimene, who resigned recently.

New Whisky Endorsements.—It is announced by Dr. James A. Hayne, state health officer, that hereafter he will discontinue the issuance of endorsements of requests for whisky to be used for medicinal purposes. There is a conflict between state and federal laws as to the issuance of permits, and the state law being the stricter, forbidding druggists to honor whisky prescriptions, Dr. Hayne announces that only the state law will be observed by him, owing to a recent ruling of the U. S. Supreme Court to the effect that, when two laws conflict, the more stringent is to be observed.

SOUTH DAKOTA

Personal.—Dr. Louis Holtz, Aberdeen, former city health officer, is leaving for Europe, where he will spend a year attending clinics in Germany, Austria, France and England. Dr. Guy R. Duer of Stoughton, Wis., will succeed Dr. Holtz in his practice.——Dr. Stephen A. Donahoe, Sioux Falls, was recently elected president of the South Dakota Seventh District Medical Society.

TENNESSEE

Bill Proposed to Help Addicts.—Legislation will be introduced at the next session of the legislature, by Judge Fitzhugh, providing for power to sentence drug addicts without means to secure medical aid, to a county and city institution. It is hoped to have a farm in operation in the early spring, so that all addicts that are in desperate need of relief may be given treatment at an institution, which will later become self-supporting.

TEXAS

New Children's Clinic.—A building is under construction at the Richmond Freeman Hospital, Dallas, at a cost of $60,000, including equipment. The new addition will be devoted to a children's clinic.

County Elections.—Dr. Lewis W. Pollock, Temple, was elected president of the Bell County Medical Society recently. ——Ellis County elected Dr. Samuel L. Wadely, Palmer, president of the medical society.——Drs. Elbert D. Rice and Hugh H. Wisdom were elected president and secretary, respectively, of the Smith County Medical Society.——Williamson County Medical Society elected Dr. Melton R. Sharp, Granger, president, and Dr. W. G. Pettus, secretary.

PHILIPPINE ISLANDS

New Health Regulations.—All cooks and house servants in Manila must report to the health authorities of the city for regular inspection and certification that they are free from disease, under new regulations issued by the health department in its campaign against contagious diseases. It is believed that many epidemics and much of the communicable disease are spread by cooks handling food, especially in the restaurants.——Recently a municipal ordinance was effected in Manila to prevent small stores and shops from giving drinking water to their patrons, since such water, usually taken from infected wells, was a constant source of infection in the spread of typhoid.

PORTO RICO

Medical Association of Porto Rico.—At the twenty-first annual meeting of the association, held at Ponce, December 16-17, under the presidency of Dr. P. Gutierrez Igaravidez, San Juan, the following officers were elected for the ensuing year: president, Dr. A. Martinez Alvarez, San Juan; vice president, Dr. Osvaldo Goyco, Ponce; treasurer, Dr. Jacinto Avilés, San Juan, and secretary, Dr. Agustin R. Laugier, San Juan. Both the secretary and treasurer were reelected. San Juan was selected for the 1923 meeting.

CANADA

Vital Statistics.—In the city of Toronto, Ont., during 1922, there were 13,304 births and 6,105 deaths, as compared with 13,976 births and 5,867 deaths in 1921.——London, Ont., had 1,516 births and 970 deaths in 1922, against 1,536 births and 1,003 deaths in 1921.

"Insulin" Accepted by Great Britain.—It is announced by the *Canadian Medical Association Journal* that the medical research council of Great Britain has accepted the patents for the manufacture of "insulin," the pancreatic extract isolated by Dr. Banting and Dr. Best in the physiologic laboratory at the University of Toronto. The council will act as sponsors for the distribution of insulin in Great Britain.

Canadian Association of Nurses.—At the annual convention of the Canadian National Association of Nurses held in Edmonton, it was decided to establish a national office for the association, with a paid executive secretary in Winnipeg. ——The nurses of Canada are collecting $65,000 for the purpose of erecting a memorial to the Canadian nurses who lost their lives in the World War. This memorial will be erected in Ottawa.

Memorial to Colonel McCrae in France.—The Imperial Grave Committee have finally accepted the plan for a memorial to the late Col. John McCrae, C. A. M. C., in Wimereux Cemetery, France, for which funds have been subscribed by the Canadian Clubs of Canada. The suggested memorial is in the form of a stone seat at the entrance to the cemetery, at one side of which there is to be a house of records and at the other a shelter, both handsome structures. On the seat will be inscribed a verse from Colonel McCrae's poem "In Flanders' Fields."

Personal.—Dr. Violet Amelia Shaw, Toronto, sailed recently for China, where she will act as a medical missionary.——Dr. Frederick G. Banting has been awarded the Reeve prize by the University of Toronto for his research work on the treatment of diabetes by "insulin."——Dr. Dorothy M. Trapp, Toronto, has been appointed a member of the resident staff of the Toronto General Hospital.——Dr. Joseph Edgar Bates has been awarded the Ellen Mickle fellowship in the University of Toronto, and will continue his work in the department of pathology.——Dr. Alexander E. Garrow, Montreal, has recently returned from Europe.——Dr. Ronald Levesque, Montreal, sailed recently on the *Empress of France* for Liverpool.

GENERAL

Veterinarians Convene.—The fifteenth annual conference of the veterinarians was held at the New York State Veterinary College at Cornell University, Ithaca, N. Y., January 11-12. Dr. Livingston Farrand, president of Cornell University, gave the address of welcome. Prof. C. L. Durham spoke on "Veterinarians in the Days of the Romans." Medical and surgical demonstrations were given during the afternoon of the 12th.

Western Surgical Association.—At the annual meeting of the association in Minneapolis, December 8-9, the following officers were elected for the ensuing year: president, Dr. Horace G. Wetherill, Denver; vice presidents, Drs. Willis D. Gatch, Indianapolis, and Clarence G. Toland, Los Angeles, and secretary-treasurer, Dr. Warren A. Dennis, St. Paul. The next meeting of the society will be held in December, 1923, at Colorado Springs, Colo.

Preventable Accidents.—Approximately 8,000 persons were killed in automobile accidents in the fourteen states where statistics on such fatalities are kept, according to the United Press. This has broken all records for former years, and fully 95 per cent. of the accidents, traffic experts estimate, were of the "preventable" type. New York was first, with 2,000 persons killed, and Pennsylvania second, with a casualty list of 1,100. Illinois and California ranked third in the list, with 1,000 killed in each state from automobile accidents.

Bill Proposed in Senate to Define Intoxicating Beverage.—A bill introduced by Senator Spencer of Missouri would provide for the appointment of a commission to investigate and determine what alcoholic content in a beverage makes the beverage intoxicating. The commission is given power to summon witnesses and to conduct experiments to enable it to report findings on the general subject. Senator Spencer asserted that the measure would determine "in a fair and scientific manner, as far as human investigation can determine the question, what amount of alcohol does make a beverage intoxicating."

International Cooperation on Illicit Use of Narcotics.—Col. O. G. Forrer, former assistant director of the prohibition bureau's narcotic division, has been sent to Europe to confer with foreign governments for the purpose of stopping the illicit shipment of drugs and narcotics into the United States. He carries full credentials from the state department to similar officials in several countries. His plans call for conferences with the authorities in Italy, Spain, France and possibly Germany, with a view to securing their cooperation. The decision to carry the antidrug campaign overseas was reached on information obtained by the federal authorities with the recent seizure in New York of a record shipment of morphin and cocain which had just been landed from a transatlantic steamer.

The Voight Filled Milk Bill Favorably Reported.—The Voight filled milk bill, which has passed the House of Representatives, has been favorably reported to the Senate from the Senate committee on agriculture. It is one of several measures demanded by the "farm bloc" Senators for passage at the present session of Congress. The bill defines filled milk as "any milk, cream or skimmed milk, evaporated, concentrated or dried, to which has been added any fat or other milk fat so that the product is in imitation or semblance of milk, cream or skimmed milk." The bill is directed particularly against manufacturers who combine skimmed milk and cocoanut oil, and sell it as an imitation of evaporated milk. The bill declares such filled milk is "an adulterated article of food injurious to public health, and its sale constitutes a fraud upon the public." Its shipment in interstate commerce is forbidden under a penalty of $1,000. The committee's report to the Senate states:

> Your committee does not doubt that the sale of filled milk as at present carried on is a violation, if not of the letter, of the spirit of the pure food and drugs act. This act cannot regulate the conduct of the retail dealer. He can buy this compound for about 3 cents per 1-pound can less than he is obliged to pay for the genuine article. Many instances were brought to the attention of your committee where retail dealers advertised the compound as "Hebe milk," "Silver Key milk," etc., and investigations conducted in many of our large cities reveal that the dealers were selling the compound as being as good and better than regular evaporated milk. It was shown that the compound was largely sold in sections of cities inhabited by people unable to read the label and people of limited means.

LATIN AMERICA

Medal to Guiteras.—The *Médica* of Matanzas relates that Dr. Juan Guiteras is living a quiet, rural life since his retirement from the charge of the national public health service in Cuba. On the occasion of the recent Sixth Latin-American Medical Congress at Havana, the Sociedad de Estudios Clinicos presented Dr. Guiteras with a gold medal as a tribute to his distinguished services to science. The address on the presentation of the medal was by Dr. Vicente Pardo Castello, followed by one of the delegates from Brazil to the congress. They spoke of Guiteras' work on yellow fever and his trip to Africa in 1916 to study epidemics under the auspices of the Rockefeller Foundation, and especially of his share in reducing the death rate from tropical diseases, not only in Cuba but also throughout the world.

Personal.—Dr. Julio de Novaes has been appointed director of the Rio de Janeiro public health service in the place of

Prof. Luiz Barbosa.——Dr. Federico Córdova was presented recently with a gold medal by the Medicolegal Association of Cuba, as a tribute to his fifty years of service as medicolegal consultant in the municipality of Havana.——Dr. Manoel de Abreu has returned to Rio de Janeiro from Europe, where he was sent on an official mission to study roentgenray installations, in view of the roentgen laboratory to be installed soon in the Emergency Hospital.——Dr. Julião do Amaral has been elected president of the newly organized Medical Club at Rio. Dr. Queiroz Lopez and Dr. G. de Figueiredo were the two secretaries elected. The *Folha Medica* states that fifty-six physicians signed as founders of the society. The committee to draw up the constitution includes, besides the officers, Drs. Lameira Ramos, A. F. dos Santos, H. Machado Silva and Eudoxio dos Santos.——Dr. Mario d'Utra e Silva has returned to Rio after five years abroad.——Dr. J. T. Borda was recently tendered a banquet by his friends in celebration of his appointment to the chair of psychiatry at the University of Buenos Aires.

Four Years of Public Health in Brazil.—The retiring president of Brazil has published a review of what has been accomplished in the four years of his incumbency. The *Folha Medica* reproduces the part devoted to public health matters. The retiring president organized the national public health service on a new and comprehensive basis. There are now four tuberculosis preventoriums in Rio and thirteen for leprosy and venereal disease, and twenty-seven others have been founded elsewhere in the country. The milk supply, and the sanitary service of the merchant marine were the subject of special regulations, and a laboratory for food inspection was founded. Several new hospitals were organized and an old asylum was transformed into a modern hospital of 250 beds, with a model training school for nurses. Fourteen states now have antivenereal disease stations and two more will soon have them. The system of Prophylaxis Rural to combat malaria, etc., has been installed in fourteen states; and the Guinle-Gaffrée Foundation has provided four dispensaries in Rio and two others are under way, as are also the plans for a 200 bed hospital. An army convalescent home was recently inaugurated; and the first public hospital for the tuberculous is soon to be thrown open, and a second one is already under way. These three institutions are at an altitude of 407, 600 and 820 meters, respectively.

FOREIGN

Royal Institution.—At a general meeting, December 4, with Sir James Crichton-Browne in the chair, Sir Arthur Keith was elected secretary to succeed the late Col. E. H. Grove-Hills. Professors Urbain (Paris), Ehrenfest (Leyden), Knudsen (Copenhagen), Bjerknes (Christiania), and Dr. Irving Langmuir were elected honorary members.

Biologic Neuropsychiatric Reunions.—Under this heading, a series of conferences have been organized at Paris for physicians to inspect for themselves the new specialist procedures in diagnosis and treatment of nervous and mental disease. The new procedures will be demonstrated by experts and moving pictures, and questions answered on general biology as applied to neuropsychiatry. Dr. A. Brousseau, Asile clinique Sainte-Anne, is in charge of these "reunions," which are to be held at intervals during the winter.

Infectious Diseases in Italy.—The statistics for 1921 have just been published. They show a total of 278 cases of epidemic (lethargic) encephalitis, but only eighty-six cases of epidemic meningitis. There was a notable decrease in the new cases of pellagra, but at Ronciglione, in the Rome District, about 1,000 cases of spirochetal jaundice were reported. There were 25,527 cases of typhoid reported; in some places, this amounted to 15 or 19 per 10,000 inhabitants. In Umbria, Venice, Tuscany and Calabria, it averaged 10 to 14 per 10,000.

A Medical Flyer in Belles Lettres.—A group of physicians has founded an artistic and literary review as the organ of the Groupement international des médecins artistes et littérateurs. Dr. Giuliani of Paris is the director, and the review publishes nothing that has been published elsewhere. The October issue contains a novelette by Dr. L. Graux of Paris, a serial novel by Dr. F. Brexals, a play by Dr. G. Trezel, and poems. The name of the review is *Epidaure*, and the address of Dr. L. Giuliani is rue Monge 62, Paris, France. The temple of Aesculapius was at Epidaurus.

Military Medical and Chemical Congress.—The Second International Military Medical and Chemical Congress will be held in Rome, May 28-June 2, 1923. The following subjects will be discussed: Evacuation, collaboration between civil and military authorities on questions of health, the treatment of penetrating wounds of the chest and their sequels, and chemical laboratories in the field, their rôle and methods. The official organ of the meeting is the *Giornale di Medicina Militare*. Communications regarding the meeting should be addressed to the Ministere della Guerra (Minister of War), Via XX Settembre, Rome, Italy.

New Curriculum at University of Paris.—A new plan for medical courses will be instituted at the University of Paris with the opening session of 1923, it has been announced by Professor Roger, dean of the school of medicine. The outline as it pertains to the different years is as follows: first year: morphologic studies, as represented by anatomy, histology and embryology; second year: study of function, as represented by physiology, biochemistry and pharmacology; third year: studies in pathology, as pathologic anatomy and histology; experimental pathology, surgical pathology, bacteriology and parasitology; fourth year: special pathology, diagnosis, clinical medicine, surgery and obstetrics; fifth year: first semester, hygiene, public health, clinical specialties; second semester, elective, general "perfection," and sixth year: hospital intern service.

Medical News from China.—Dr. Edward M. Merrins, following a prolonged illness, has returned to his duties as editor of the *China Medical Journal*. Dr. Lincoln, St. John's University, Shanghai, acted as editor in Dr. Merrins' absence. ——The Hunan-Yale College of Medicine opened its school session, September 25, with an enrolment of eleven new students. The following additions have been made to the faculty: Drs. R. M. Atwater, A. B. Dayton, Louise W. Farnam, William C. Grosvenor, W. S. T. Neville and Chow F. Tang.——Dr. W. K. McCandliss has gone to Kochow, where he will superintend the erection of new hospital buildings. While traveling on the North River from Canton and Lienchow, he and his party were attacked by bandits and robbed of all their possessions, including their clothing.—— The Hongkong University announces that it needs additional quarters for its students. Plans have been prepared for the enlargement of St. John's and Missionary halls at a cost of $196,000. A campaign will be conducted to raise the necessary amount.——Dr. L. F. Heimburger, formerly of Weihsien, has been appointed professor of dermatology at the Shantung Christian University School of Medicine, Tsinanfu.——It is announced by the Amalgamated Association of Cigarette Shop Unions that red-headed matches (presumably consisting of a mixture of red phosphorus and antimony trisulphid) have been responsible for a number of suicides in China. A resolution was passed against further production of them.——Dr. Joseph L. Harvey, resident physician in the John G. Kerr Hospital for the Insane, has been appointed roentgenologist to the Canton Medical College.——During August and September, the number of cases of cholera admitted to the Municipal Isolation Hospital for Chinese and to the two Chinese Red Cross cholera hospitals was 283, with thirty-one deaths.—— Arrangements have been completed for the translation of the British Pharmacopoeia into Chinese, at an approximate cost of $5,000, the money being guaranteed by the wholesale druggists and manufacturing chemists of Great Britain.—— Nearly half a million taels' worth of opium and cocain was seized by the customs officers at Shanghai, from Japanese steamers entering that port recently, it is reported.——The American Church Mission Hospital at Changshu was formally opened in September. Dr. Walter H. Port is superintendent.——It is reported that no less than twenty-eight missionaries and several natives are at present suffering from sprue in Korea, and that typhus is killing thousands of Koreans at Pingyang.

Deaths in Other Countries

Dr. **Samuel Hammond** in Queensland, Australia, aged 86. ——Dr. **Frederick Bryan**, alienist, in Scotland, suddenly from angina pectoris.——Sir **Isaac Balfour**, M.D., for thirty-four years professor of botany at the University of Edinburgh, aged 69.——Dr. **C. A. L. Rademaker** of Amsterdam, aged 61.——Dr. **Felix García**, medical inspector for the port of Matanzas, Cuba.——Dr. **Mahaux** of Brussels, shot in his home by an insane woman in revenge for his testimony as to her mental condition.——Dr. **G. R. Marone** of Acireale, who had been decorated several times for distinguished service in the Libyan campaign and during the World War.——Dr. **J. J. Maats** of Purmerend, aged 81.—— The *Revista de Medicina y Cirugía* of Havana mentions the death of Dr. **Francisco Rayneri** at an advanced age. He had been a medicolegal expert for the city of Havana.

Government Services

The Army School of Aviation Medicine

The Army School of Aviation Medicine completed its three-month course at Mitchel Field, L. I., last week, according to information given out by the Surgeon General. Seven officers of the Army Medical Corps and eleven officers of the Navy Medical Corps were graduated, thereby qualifying to serve at flying fields and other places in connection with aviation. The graduation exercises were attended by Major Gen. Merritte W. Ireland, Surgeon General of the Army; Major Gen. Mason M. Patrick, chief of the Army Air Service, and representatives of the bureau of medicine and surgery and the bureau of aeronautics of the Navy. The graduation class included: Majors B. B. Warriner, W. S. Woolford, and J. F. Duckworth, and Captains I. J. Gibson, D. M. Blakely, B. J. Peters, and C. V. Hart of the Army Medical Corps; and Lieuts. A. C. Smith, R. P. Henderson, F. R. Bealer, J. C. Adams, F. H. Clements, J. R. Poppen, G. L. McClintock, W. W. Davies, W. H. Wynn, J. D. and C. C. Ammerman of the Navy Medical Corps. The following officers of the Naval Medical Corps have been detailed to take the next course, commencing January 15: Lieut.-Com. Frederick Ceres and Lieuts. Bertram Groesbeck, Jr., George D. Thompson, Robert G. Doris, Stuart J. Trowbridge, Clinton G. DeFoney, Louis E. Mueller, John L. Farmer, Grover C. Wilson, George T. Dill and Earl E. Dockery. It is expected that about six officers of the Army Medical Corps will be detailed to take the instruction.

Policy as to Annual Physical Examination Changed

Circular No. 211, the formal order for the annual physical examination of officers and warrant officers of the army, has been issued. The order requires that all officers be physically examined during the calendar year 1923, and that such examination be held, as far as practicable, in the month of January. It may be held at a later period for the purpose of avoiding expense or for other good reasons. The primary purposes of these examinations are disease prevention and the conservation of health, to be accomplished largely by the early detection and treatment of latent physical defects. In former years, these examinations were often the basis for retirement of army officers. The present policy of the War Department is to employ these examinations not for the purpose of disqualification, but to locate incipient and obscure physical and mental defects which may impair the health of the officer, and to remedy and overcome defects which, if allowed to continue, would result in disqualification.

U. S. Veterans' Bureau Hospital Construction

During the calendar year 1922, six additional Veterans' Bureau hospitals were established, three of which, totaling approximately 1,142 beds, are for tuberculous patients; two others, totaling 705 beds, are for neuropsychiatric patients; and one hospital, furnishing 165 beds, for general cases. In addition to these, there were added to existing veterans' hospitals throughout the year a total of 1,072 new beds at four different hospitals, 300 of which were for neuropsychiatric cases, the remainder for tuberculous cases. At present, there are under construction or being planned fifteen new hospitals, totaling 5,059 beds, of which 1,878 are for tuberculous patients; 2,931 for neuropsychiatrics, and 250 for general cases. In addition, there are under construction, at four existing U. S. Veterans' Bureau hospitals, new modern hospital units which will provide for a total of 1,268 beds, of which 1,068 will be for neuropsychiatric cases. This excludes such hospital beds as were opened during the calendar year.

Advisory Committee on Education of Sanitarians

At the meeting of the advisory committee to the Surgeon-General on the Education of Sanitarians and the Future of Public Health in the United States, held in Washington, D. C., Jan. 3, 1923, the following were present: Dr. Haven Emerson and Dr. Wickliff Rose of New York, Dr. Winslow of New Haven, Dr. Howell and Dr. Welch of Baltimore, Dr. E. G. Williams of Virginia and Dr. A. J. McLaughlin of the Public Health Service. Among other matters discussed was the question of holding a joint meeting with the Committee on Medical Education and Licensure and Public Health and Hospitals of the American Medical Association in Chicago on March 7. Favorable action was taken and the program is now being arranged. New members added to the advisory committee are Dr. William H. Park of New York, Dr. A. C. Abbott of Pennsylvania, Dr. Frederick W. Sears of New York, Dr. John Sundwall of the University of Michigan, Prof. C. E. Turner of Boston, Dr. Lindsley R. Williams of New York and Dr. Henry Vaughan of Detroit.

Commissioned Status for Sanitary Engineers

Sanitary engineers in the public health service, under the terms of a bill introduced by Senator Watson of Indiana, would be given the pay, allowances and rank of medical officers. There is a proviso in the bill requiring them to pass an examination conducted by commissioned officers of the service.

Board to Recommend Medals

Work of the board of officers of the Army convened in Washington recently to recommend officers and enlisted men for medals and other awards for distinguished and exceptionally meritorious service is progressing satisfactorily. Under the law, decorations for World War service must be awarded before April 1, next. Several members of the Medical Corps, it is said, are being considered by the board for awards.

Medical Officers Recently Retired

Ninety-two officers of the Army have been found incapacitated for active service and have been transferred to the retired list, according to an announcement made by the War Department. The list includes the following members of the medical department of the Army:

Col. James S. Wilson, Medical Corps.

Lieut.-Cols. George H. R. Gosman, William M. Smart and George F. Juenemann, Medical Corps.

Majors Henry N. Stilphen, Joseph L. Siner, Frederick S. Macy, John P. Kelly and Corydon G. Snow, Medical Corps.

Capt. Zera E. Bolin, Medical Corps.

Capts. Carl Graner and Edward A. Lovelly, Jr., Medical Administrative Corps.

Women's Advisory Council Meets

There was a meeting of the Women's Advisory Council to the Public Health Service in the office of the Surgeon-General at Washington, January 12 and 13. The greater part of the program was devoted to the subject of immigration in its relation to public health. Among those who accepted invitations to address the conference were: the Hon. Albert Johnson, chairman of the House committee on immigration and naturalization; the Hon. W. W. Husband, commissioner-general of immigration, and Dr. Elizabeth B. Thelberg.

President Vetoes Bursum Bill

President Harding last week vetoed the Bursum pension bill that recently passed both houses of Congress. This measure carried increases in pensions to veterans of the Civil and Mexican wars and their widows, including nurses. The sum fixed was $50 a month. President Harding based his veto on the ground that these pension increases would cost the government $108,000,000. He also was opposed to paying pensions to widows who married veterans fifty years after the Civil War, as was specified in the bill.

Hospitals Authorized

Pursuant to instructions from the Adjutant-General of the Army, the organization of a veterinary station hospital, organized reserves, to be known as Veterinary Station Hospital No. 6 (a seventh corps area unit) has been authorized.——A veterinary evacuation hospital, to be known as Veterinary Evacuation Hospital No. 7 (organized reserve, a ninth corps area unit) has also been authorized by the Adjutant-General of the Army.——Pursuant to instructions of the Secretary of War, the organization of an evacuation hospital, organized reserves, to be known as Evacuation Hospital No. 24 (St. Vincent's Infirmary Unit, Little Rock, Ark.) has been authorized by the Surgeon-General.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Dec. 18, 1922.

Protection Against Anthrax

In a previous letter, the establishment by the government of a station for the disinfection of wool and hair at Liverpool was described. A report has now been issued on the work done. The disinfection process is carried out in seven stages; the machinery for opening the bales, feeding the material into machines, disinfecting, drying, cooling and rebaling is so designed as to permit of the carrying out of all seven stages in sequence as one operation, without handling of the material by workmen. Hydraulically pressed bales, as imported, are placed on the moving platform of a feeding and opening machine, and the steel bands and canvas covers are removed. The material is delivered into the first process machine, where it is submitted for ten minutes to a dilute alkaline solution at 102 F., to remove the albuminous material by which the anthrax spores are protected. It is then squeezed through rollers and delivered into the second process machine, where it is acted on for twenty minutes by a dilute alkaline soap solution at 102 F., in two successive baths, to promote a condition of the spores in which they can be killed with ease. This stage also cleanses the material completely. It then passes through rollers into the next process machine, where the disinfection is performed in two successive baths (with rollers between) of a 2.3 per cent. solution of formaldehyd at 106 F. It again passes through rollers, and is blown by air into a drying machine, from which it is discharged into a cooling machine, and thence is blown by air into the charging box of a baling machine.

The machines containing the formaldehyd solution are completely enclosed. When they have to be entered, for example for rewrapping the rollers, the workers wear army box-respirators filled with charcoal. No ill effects have occurred among the workers. To control the efficiency of the disinfection, samples of material before and after the process are examined by an independent bacteriologist. Since proper control of the disinfection has been established, anthrax bacilli have not been found after the process, though present before it in twenty-nine of 306 samples. Bacteria other than anthrax have been cultivated after the process, but this does not necessarily indicate insufficient disinfection, though the cultivation of more than five colonies of other organisms is regarded as pointing to insufficiencies. A charge is made for disinfection, and it is calculated that this should be 3 cents a pound to make disinfection a paying proposition. The suggestion was made that by the combined use of ultra-violet and roentgen rays disinfection could be carried out, and much more cheaply. But a trial of this method showed it to be a failure.

The Elixir of Life Again

One learns from the lay press—for so far the medical journals have taken no notice of the subject—that Dr. Conradi Buchardi has come from Vienna to practice "the Steinach operation of restoring youth." We are told that he has operated on nine patients—six women and three men—and that his engagement book is full. In a press interview, Dr. Buchardi has said: "I have just treated a woman of 67 with the roentgen rays, and I am hopeful of the result. The operation takes about half an hour. Women have to be treated three or four times. For men there is just a simple gland operation, and it takes the patients from one to three months to regain their lost energies. The operation can be repeated once. There may be a first operation on one side which will restore from 5 to 20 years of age. At the end of that period the other gland can be treated and the patient obtain another five to twenty years' lease of life. After that, old age comes on in the ordinary way and there is no sudden collapse." Dr. Buchardi states that film and theatrical people, to whom looks mean so much, are seeking his services. He alleges that he has operated in Vienna and Germany on Englishmen and Americans "with complete success." Why Germans have not participated in the benefits he can confer he does not explain. Provided "decay has not gone too far," the operation can be performed up to the age of 70. He was reminded of the operation on Mr. Wilson, who died suddenly on the night before he was to lecture in London on his rejuvenescence by Steinach, but he made no comment.

The Indianization of the Indian Medical Service

In previous letters, the effect on the Indian medical service of the government policy of extending the rights of Indians was described. This service at one time offered such opportunities for research and such excellent emoluments that it was eagerly entered by the ablest young physicians after graduation. There was a very difficult competitive examination at which only the highly competent stood a chance. The government still requires the services of European physicians, but the desire to enter the service has so diminished that, instead of a competitive examination, the vacancies are announced in the press, and physicians are invited to apply for them. Candidates must be under the age of 32. Service as an officer in the war counts for pay promotion and pension purposes. Thus, an officer with three years' war service enters as a captain and receives $2,800 a year. A free passage to India is provided for himself and his family. He has the right to retire at the end of five years with a gratuity of $5,000 and a free return passage.

Heredity and School Education

In a lecture delivered to school teachers, Karl Pearson said that the child is made by his parents, and all that teachers can do is to temper the steel. The physician and the teacher are not going to alter to any great extent the health or intelligence of the child. That did not mean that education was not possible, but that the material was given to them, and the teacher was not going to alter it. It was impossible to say that there was any significant increase of intelligence with age between 4 and 19. Quick or sullen temper was not modified with age, nor was shyness, conscientiousness or aptitude for athletics or handwriting. Kipling's strictures on "flanneled fools at the wicket, and muddled oafs at the goal" were not justified by the facts. Athletics generally went with quickness and intelligence. Referring to physical characteristics, Pearson said that medieval writers viewed red hair with suspicion, and in morality plays Judas was always given a red beard; but red-haired boys and girls today were the most conscientious, athletic and popular.

Syphilis Attributed to the Hire of a Wig

An action was brought against a well-known theatrical costumier in which syphilis was stated to have been contracted in a novel way. The plaintiff, a man of 33, went to the defendant's shop to hire a wig for the part of a woman at a concert for a discharged soldiers' fund. He was shown a number of wigs, which appeared to be kept in a heap in a drawer. He tried on one which had evidently been used before, because grease paint still adhered to the lining. The wig was prepared for him, and he wore it three times. Soon afterward a sore appeared on the right side of the head about where the edge of the wig would come, and later a

rash broke out. He consulted a specialist, Mr. J. E. R. McDonagh, who diagnosed syphilis, with primary sore on the head, and considered that the infection probably came from the wig. In cross-examination he said that he did not think that an abrasion was necessary for the contraction of syphilis. Another specialist, Mr. Arthur Whitfield, corroborated this evidence, and suggested that the grease paint might keep the spirochetes alive. Syphilis might be contracted in hair cutting, combing the hair or rubbing the head on a pillow. Evidence was given for the defendant that his wigs were cleaned in a rotary machine and soaked in benzin, which would remove all grease as well as dirt. A wig returned from hire was never handed to another customer until it had been cleaned. The judge pointed out that the syphilis might have been contracted in the other ways mentioned. The jury was not satisfied that the evidence proved infection from the wig, and gave a verdict for the defendant.

The Prevention of Anthrax

The International Advisory Committee on Anthrax, sitting in London, has adopted a report by its subcommittee on the criteria to be employed in settling a list of countries to be exempted from compulsory disinfection of wool, hides and animals. The report recommended exemption of those countries in which the raw material had not caused any cases of anthrax in the importing country for five years, unless anthrax spores had been discovered in the raw material by bacteriologic examination, and also of those countries of origin in which there was an absence of anthrax in an epidemic state among animals, or in which there was an application of strict measures for stamping out any outbreak at the source.

Insurance Against Smallpox

The outbreak of smallpox at Poplar has been successfully checked, and only scattered cases have followed in London. In the whole country there have been 902 cases of smallpox in the first eleven months of 1922, of which twenty-seven were fatal. It is supposed to have been due to the importation from eastern Europe of a particularly virulent type of infection; hence its high mortality. The outbreak has given rise to a novel form of insurance. Underwriters at Lloyds have provided for financial indemnity should the assured fall a victim to smallpox within twelve months. The rates quoted are 0.05 per cent. should the applicant have been vaccinated within the last ten years, and 0.1 per cent. if there has been no such vaccination.

PARIS

(From Our Regular Correspondent)

Dec. 15, 1922.

Professor Bernard's Impressions of the United States

Dr. Léon Bernard, professor of hygiene at the Faculté de médecine of Paris, at the invitation of the Rockefeller Foundation visited the principal institutions in the United States that are concerned with the advancement of public health. Recently he presented to the Academy of Medicine an account of his visit.

Bernard stated that the essential principle that lies at the basis of the organization of public health in the United States is that public health work should be administered by special functionaries termed "health officers." He emphasized particularly the large measure of authority exercised by these officers. Another thing that impressed Bernard was the fact that all the health officers are technicians, from the health officer of the village up to the state commissioner of public health. The state has organized special short courses to train small town health officers in the exercise of their duties. For the higher positions, physicians are chosen who have completed special courses of instruction in the universities.

The three forms of activity on which the functioning of the public health services are based are the collection of vital statistics, work in experimental laboratories, and educational propaganda. All these tend to encourage the idea of early medical intervention, which is seconded and prolonged through the aid of the visiting nurse. Bernard states that, in order to comprehend the high degree of importance ascribed by American hygienists to vital statistics, which was a source of wonder to those of us who collaborated during the war period with American organizations, it must be borne in mind that, in the United States, not only do these statistics constitute a basis for investigations, in which they have become a professional necessity, as it were, but also that hygienists have the responsibility of collecting them. He explains, further, that the administration of a civil state, as we conceive of it in France, does not exist in the United States. In the cities, the states and the central government, the reports of births and deaths are made to the department of public health. The result is that, instead of these being regarded merely as the basis of simple administrative or demographic considerations, they are taken as evidence of the degree of efficiency of the public health department in question. Another result is that the filling out of death certificates, instead of being a simple formality entrusted to the family of the deceased and controlled by a physician unfamiliar with the case, must be done by the attending physician (except in cases of death by accident), who is obliged to state the cause of death. These declarations become consequently authentic documents, the collation of which gives a clear idea of the state of the public health; this also makes it possible to control the exactitude of the declarations of diseases. It will be seen how much superior this system of collecting vital statistics is to that in vogue in France, to the defects of which I referred in detail in a previous letter (THE JOURNAL, Dec. 30, 1922, p. 2244).

Speaking of the development of the laboratories in the United States, Bernard stressed the point that the work of these laboratories is not confined to the performing of clinical examinations; they are all centers of scientific research. The same spirit and the same zeal for research are found in the laboratories that make clinical examinations for the public as are observable in the laboratories of the universities or of the private institutes. The workers are encouraged by the administrators themselves to do research work, and special funds are often provided for such purposes.

Bernard praises also the progress made in the United States in instruction in hygiene, which is all the more remarkable when compared with the wretched condition of such instruction in France, where the need is so great.

As for the social scourges, the campaign that is being waged against them in the United States is more effective than in France. The means of combating tuberculosis are the dispensary with its physician and visiting nurse, the sanatorium, the special hospital and educational propaganda. Compulsory notification for all cases of pulmonary tuberculosis has been established in all the states. The campaign against venereal disease has been no less vigorous.

Absolute prohibition of alcohol is regarded by Bernard as the culminating event of social hygiene in the United States. He is quite familiar (as we all are) with the exaggerated stories, often circulated by persons with ulterior motives, in regard to contraband alcoholics, clandestine manufacture, and intoxication by alcoholics of questionable origin and by various narcotics. This should not prevent us from recognizing the great, incontrovertible fact, which rises

above these petty infractions of the law, that a country with 110 million inhabitants has accepted the interdiction of the sale and the consumption of all alcoholic beverages. One passes through good-sized cities and vast rural districts without encountering a single saloon. Under these conditions, the regular alcoholization of the masses is rendered impossible. Although accurate statistics have not been collected as yet, it can already be observed that the prisons and the hospitals for the insane have fewer inmates. It has been noted also that there has been an upward trend in the labor output, and an improvement in general conditions as affecting the life of workingmen. It may be said, therefore, that a people capable of such renunciation as regards the gratification of a desire as old as humanity itself is, indeed, a great people.

Insanity in Relation to the War

Dr. Paul Cassel, general secretary of the departmental committee of the war injured of the department of the North, has just published an interesting study on the subject of insanity in relation to the war, his findings being based on statistics collected in the department of the North. His statistics show that the incidence of insanity has not increased, as the result of the war. It is true, there has been a greater frequency of "melancholic states," but this increase is largely compensated for by a decrease in the number of cases of *folie alcoolique* (insanity from alcoholics). However, it must be admitted that the war has been responsible for certain cases of jacksonian epilepsy, incomplete types of exophthalmic goiter, and syndromes arising in those who have suffered brain injuries and who consequently present problems for the psychiatrist. It should be added that the effects of this terrible period of four years of war are manifested not only in the hospitals for the insane. There seems to be reason to fear that the large number of syphilitics in the army whose condition was either not diagnosed or who received inadequate treatment may cause, in the next few years, an increase in the already high incidence of general paralysis. Just as it is not feasible, at the present time, to write a history of the military events of the war, it is likewise impracticable to produce a clear account of contemporaneous medical happenings, especially when we are concerned with phenomena so delicate in their mechanism, so complex in their origin, and so variable in their evolution and their duration as are cerebral troubles.

The Factory Physician

Professor Cazeneuve of Lyons called attention recently to the necessity of special instruction for physicians appointed to look after the sick in large commercial chemical houses (THE JOURNAL, Nov. 25, 1922, p. 1860). In a recent number of the *Journal de médecine de Lyon*, Prof. Etienne Martin takes up the same subject and emphasizes the same need. He holds that the "factory physician," before taking on the responsibilities associated with the employment and conservation of labor, should acquire special theoretical and technical knowledge in the field of occupational diseases and industrial toxicology. It will not be necessary to create in our medical schools special chairs for this purpose. All that will be needed will be to adapt certain courses of instruction to this new function, and to assign to the professors responsible for these courses the needed collaborators and the means of carrying out this adaptation. The main thing would be to amplify the instruction in industrial toxicology and to develop further our knowledge of occupational diseases. The instruction, however, should not be confined to theoretical lectures on these subjects, but should include practical demonstrations. Professors of medical jurisprudence are, for the most part, members of the councils on public health. They might easily use the influence that goes with their official position to secure from manufacturers the necessary authorization for their pupils who intend to become factory physicians to visit chemical plants and study conditions at first hand. Students would thus gain a practical experience that would be exceedingly valuable to them.

Vital Statistics for France During the First Six Months of 1922

The *Journal officiel* has just published the vital statistics for France during the first six months of 1922, and compares them with the statistics for the corresponding period of 1921:

	1922	1921
Living births	396,726	421,180
Deaths	387,681	348,329
Excess of births over deaths	9,045	72,851

The results, unfortunately, are quite unfavorable. The number of births has decreased, from one year to the other, by more than 25,000, while the number of deaths was increased by approximately 40,000. The net result is that the excess of births, which, in 1921, amounted to 72,851, has been reduced, this year, to 9,045. During the same period, the number of marriages decreased by nearly 45,000 (193,454 as against 238,185).

Election of Professor Vincent to the Academy of Sciences

At its last meeting, the Academy of Sciences elected Prof. H. Vincent as a member to fill the vacancy in the section of medicine and surgery caused by the death of Professor Laveran. Professor Vincent is a member of the faculty of the Ecole d'application de médecine et de pharmacie militaires of Val-de-Grâce. He also holds the office of general medical inspector of the army, with the rank of general of a division. He is known chiefly for his works on antityphoid vaccination, fusospirillar symbiosis (Vincent's angina), etc.

A New Medical School

A joint faculty of general and colonial medicine and of pharmacy has been recently established by government order in the city of Marseilles. Special emphasis will be placed, at this school, on instruction and special researches in colonial and tropical medicine. The school will not be opened until the delegates of the minister of public instruction have inspected and approved the buildings, library and general equipment.

Estimation of Disability in Industrial Accidents

While engaged at his regular work, a workman whose right hand was injured in the war had his left hand caught in a roller. The court of Besançon estimated at 50 per cent. the reduction in the working capacity of the man, taking as the basis "the percentage of disability usually allowed by law for the loss of the left hand" in a workman who has no other infirmity. The case was brought before the court of cassation (the highest court of France), which refused to accept the judgment of the lower court. The supreme court held that the indemnity due a workman who is the victim of an industrial accident depends solely on two factors, to wit: the wages that he was receiving before the accident, and the capacity for work that he retained after the accident. The condition of health or infirmity of the victim before the accident must not be taken into consideration. The total amount received in wages in one year furnishes the legal basis for his industrial value. More particularly, when a workman whose right hand was injured in the war loses his left hand as the result of an industrial accident, the judge may not, in fixing the indemnity to which he is entitled, take as a basis for the reduction of his capacity

"the percentage of disability usually allowed by law for the loss of the left hand"; he must consider the workman's actual condition, taking into account the almost complete incapacitation of both hands.

BELGIUM

(From Our Regular Correspondent)

Dec. 12, 1922.

Child Welfare in the Belgian Congo

There exists in the Belgian Congo a Ligue pour la protection de l'enfance noire. The purpose of this league is to combat child mortality on the Congo and to counteract harmful conditions that militate against the development of the native population. The headquarters of the league is at Brussels.

The activity of this league on the Congo is manifested by the organization of consultation centers for infants at all the stations where are found a physician, a hospital, a religious mission and a group of women interested in welfare work. At present, consultation centers have been regularly established at forty different stations. At these centers, babies are weighed, and receive milk, clothing and medicines.

Bad Housing Conditions in Antwerp

The city of Antwerp has instituted an investigation of the housing conditions prevailing, and the publication of a preliminary report sheds light on the acuteness of the housing crisis.

Anniversary of the Founding of the University of Brussels

The president announced that the commission of the foundation for the educational relief of Belgium, of which Mr. Hoover is chairman, had placed at the disposal of our alma mater a large sum of money which would not only allow the university to carry out its present plans without anxiety, but also permit the elaboration of new plans to bring all the faculties up to the level of what the Faculté de médecine would be in three years when the changes already provided for shall have been made; for it may be said that the pace for the marvelous development of the University of Brussels was set by the Faculté de médecine, for it was the first, in our capital, to expand its organization, its equipment and its institutes.

Visiting Nurses in the Home

The association of visiting nurses of Belgium has organized a home service of visiting nurses which will permit all classes of society to enjoy the benefits, when occasion requires, of a graduate nurse. Following the request of the attending physician for such service, a visiting nurse will be sent to the home of a patient, but she may remain only such time as is required to carry out the physician's prescriptions.

Radium in Relation to Tumors of the Mouth

Dr. Sluys recently called attention to the importance of an early diagnosis of tumors of the mouth. Dentists are the ones who can be expected to detect buccal cancers in the initial stage. We are just beginning to realize the great benefits that may be derived from early diagnosis since the application of radium in the early stages has given such remarkable results.

The Schick Test in Relation to Antidiphtheric Immunization

Dr. Vernieuwe presented recently to the Academy of Medicine a communication on the value of the Schick test after immunization with toxin-antitoxin mixture in diphtheric rhinitis. He stated that persons suffering from ulcerative diphtheric rhinitis usually react positively to the Schick test. When treated with the specific serum, they make rapid progress toward recovery; but as soon as the antitoxin is eliminated, the reaction becomes positive.

Antidiphtheric vaccination by the injection of an underneutralized toxin-antitoxin mixture modifies the state of receptivity of these subjects, and immunizes them (Schick test negative). It seems even capable of preventing the micro-organisms from persisting on the mucous membrane in an inactive form. However, this finding ought to be confirmed by wider investigation before it is considered as an established fact.

This research appears to have established another important finding, namely, that the creation of an operative wound in the pharynx or the rhinopharynx of a patient with diphtheric rhinitis may produce a new focus of diphtheria. This fact must not be lost sight of in operating on this region. This fact throws light on the pathogenesis of the affection, since it shows that the presence of the micro-organism, together with the receptivity of the subject, are not sufficient to produce it; there must be also a lesion of the mucous membrane or of the tissues.

BERLIN

(From Our Regular Correspondent)

Dec. 9, 1922.

Serotherapy and Chemotherapy in Puerperal Fever

Professor Bumm, director of the Berlin Universitätsfrauenklinik, at a recent meeting of the Berlin Medizinische Gesellschaft discussed his treatment of puerperal fever by means of a streptococcus serum and chemotherapeutic antiseptic. Of his 120 cases of severe streptococcus puerperal fever, the mortality of which usually ranges around 50 per cent., only 1.5 per cent. resulted fatally. Bumm admits that it is hard to determine whether, in view of the fact that the condition began with a local infection of the uterine mucosa, his treatment caused the process to remain localized, or whether the same result would have been reached without treatment. However, Bumm is inclined to assume the former to be true, since, following the treatment, the fever terminated by crisis and since a diminution of the number of bacteria in the blood could be established. The changes in the puerperal secretion also supported this view.

Welfare Work Among Patients with Venereal Disease

According to statements issued by the Dresden dermatologist Professor Galewsky, the incidence of venereal diseases in Saxony, even before the war, was greater than in other German states (excluding such large cities as Berlin and Hamburg). This condition still exists, and there has been a great increase in venereal disease, especially in the rural districts of Saxony. The percentage of women affected is much higher than formerly; according to the report of the local health insurance society of Dresden, the percentage in 1917 was 1.4, whereas in 1921 it had risen to 4.9. In Saxony there are three large special wards for venereal disease in the general hospitals of Dresden, Leipzig and Chemnitz. In the smaller cities, such as Plauen, Zwickau and Zittau, smaller services are established in a central location. In addition, there are various wards for children suffering from venereal disease. For ambulant patients there are two smaller policlinics in Dresden and one in connection with the university clinic of Leipzig; their total number of consultations in 1920 was 8,441. The lack of policlinics is partially compensated for by twelve consultation centers that were established in 1916 by the Landesversicherungs-Anstalt. Since the close of the war, the consultation centers of Saxony have given advice and treatment to 1,547 ex-service men and to 201 men who were still in the service. The number of consultations for the period from 1916 to 1921 was: 1916, 54; 1917, 976; 1918,

2,149; 1919, 8,133; 1920, 17,356; 1921, 24,707. In Leipzig and Dresden, special welfare centers have been established which endeavor to rescue and care for morally delinquent (or endangered) juveniles especially women and girls, without the interference of the police, and thus prevent them from taking the path that leads to ruin. The number of juveniles suffering from venereal disease, as registered in the Dresden consultation center, was:

INCIDENCE OF VENEREAL DISEASE AMONG JUVENILES

Year	Males	Females
1917	34	13
1918	52	20
1919	60	63
1920	76	122
1921	31	66

In addition to the welfare centers, seventeen institutions and homes of the Saxon evangelical conference have taken over the care of moral delinquents who have left school. Up to Dec. 31, 1921, 19,690 girls had passed through these institutions and homes. The welfare agencies of the Catholic Church have also been active in Saxony, but their figures do not run so high. Through the aid of the Landesverband der Deutschen Gesellschaft für Bekämpfung der Geschlechtskrankheiten (society for combating venereal disease), acting conjointly with the Deutsches Hygienemuseum, the state commission for the instruction of the people on public health problems, and the authorities in general, a campaign of enlightenment in regard to the dangers and the significance of venereal diseases has been carried on by means of lectures and exhibits in all parts of Saxony.

Personal

R. Oestreich, extraordinary professor of general pathology and pathologic anatomy at the University of Berlin, died suddenly, December 2, following an attack of apoplexy, at the age of 58. He was one of the last assistants of Rudolf Virchow, and after Virchow's death he remained at the pathologic institute under the direction of Virchow's successor, Professor Orth. He served also as prosector at the Augusta Hospital, having succeeded Professor Hansemann, who died several years ago. Besides several treatises on his special field of study, Oestreich published a number of textbooks on anatomicopathologic diagnosis. He was also an instructor in pathologic anatomy for students of dentistry.

Marriages

JOHN C. KASSMEYER, East Dubuque, Ill., to Miss Lillian May Minges of Dubuque, Iowa, at Oak Park, recently.

GLENN R. GROSS, Baltimore, to Miss Janet Langford of Frostburg, Md., at Washington, D. C., November 25.

JOHN SAMUEL TALLEY, Troutmans, N. C., to Miss Edith Murdock McLaughlin of Statesville, October 12.

BURTON RAYMOND WESTON, Mason City, Iowa, to Miss Dorothy Ellen White of Oskaloosa, recently.

JOHN MORTON DAVIS, Lynchburg, Va., to Miss Dorothy Talbott Thomas of Danville, November 18.

STUART W. HARRINGTON, Rochester, Minn., to Miss Gertrude Jones of Douglas, November 17.

JULIAN M. HOWE, Washington, D. C., to Miss Eleanor E. Elliott of Jackson, Miss., October 24.

FRANCIS E. PROCTOR, Allentown, N. J., to Miss Dorothy Mary Ford of Wayne, November 25.

ROBERT A. BUCHANAN to Miss Helen M. Dake, both of Wessington, S. D., December 14.

Martin Robert Broman to DR. MILDRED JESSIE ROBERTS, both of Chicago, December 28.

Deaths

Charles Andrew Powers ✠ Denver; died suddenly at the University Club, Denver, December 23, from cerebral hemorrhage. His body was interred in Arlington National Cemetery, Washington, D. C., in compliance with his own desire, the hour and date of the service coinciding with that set aside for the award to Dr. Powers of the distinguished service medal, which was voted him in recognition of his services during the World War. The medal was conferred posthumously by Col. Harry G. Lee, the ribbons of the decoration being pinned to the uniform in which Dr. Powers was buried. Dr. Powers was born in Lawrence, Mass., in 1858 and graduated from the College of Physicians and Surgeons (Columbia University), New York, in 1883. After serving as attending surgeon at the New York Cancer, and St. Luke's hospitals, he located in Denver in 1894. He was emeritus professor of surgery at the University of Colorado School of Medicine, and had served as surgeon at the Denver City, St. Luke's and Mercy hospitals, and the State Home for Dependent and Neglected Children; from 1908 to 1917 he was a first lieutenant in the M. O. R. C. and in 1916 went to Paris as attending surgeon of the American Ambulance Hospital Unit for French wounded. When the United States entered the war Dr. Powers was made a major and was assigned to the American Hospital at Neuilly. He received his honorable discharge in 1918 and was commissioned lieutenant-colonel, M. O. R. C., in 1919. For his services in France (notably his facial reconstruction work) he received the Belgian Order of Leopold, the Médaille de la Reconnaissance Francaise, the French Legion of Honor and a citation from General Pershing. Dr. Powers was president of the American Surgical Association in 1912; a member of the International Urological Society, the International Surgical Society, the American Society of Clinical Surgery, and at the time of his death was president of the American Society for the Control of Cancer.

Erasmus Guy Hopkins ✠ Richmond, Va.; University College of Medicine, Richmond, Va., 1899; died, December 19, at his home in Glen Allen, from carcinoma. Dr. Hopkins was born in Fredericksburg in 1877. Following his graduation he became city bacteriologist of Richmond, and served as pathologist at St. Luke's Hospital since 1907; professor of clinical pathology since 1917, and director of the clinical laboratory since 1913 at the University of Virginia Department of Medicine; laboratory director of the Retreat for the Sick and Stuart Circle hospitals; served in the M. C., U. S. Army, during the World War, in France, at Base Hospital No. 45, and at Justice Hospital Group, Toul; was honorably discharged, April 25, 1919 with the rank of major. He was a member of the American Public Health Association, the American Bacteriological Society, and Association of Military Surgeons of the United States.

William Stephen Disbrow ✠ Newark, N. J.; Medical Department of the University of the City of New York, 1887; for twenty years professor at the New Jersey College of Pharmacy; formerly on the staff of the Hospital of St. Barnabas and the Newark City Hospital; member, and at one time president, of the Newark Board of Health; aged 61; died, December 26, at the home of his son in Summit, from cerebral hemorrhage.

Isaac Roscoe Goodspeed, San Mateo, Calif.; Medical School of Maine, Portland, 1854; for ten years justice of the peace, constable, coroner and postmaster at Pescadero and associate judge of San Cruz County; for thirty-five years physician of San Mateo County; aged 91; died, December 22, at the California Sanatorium, Belmont, from senility.

John Franklin Thompson ✠ Portland, Me.; Medical School of Maine, Portland, 1886; member of the American Gynecological Society and the American Academy of Medicine; formerly professor of diseases of women at his alma mater; for twenty-five years on the staff of the Maine General Hospital; aged 63; died, December 27, from pneumonia.

Sidney Kinsman Fenollosa ✠ Pittsburgh; University of Pennsylvania School of Medicine, Philadelphia, 1902; formerly instructor of medicine at the University of Pittsburgh; on the staff of the Pittsburgh Hospital; served in the M. C., U. S. Army, during the World War; aged 49; died, December 11, from pneumonia.

Shirley Calhoun Gage, Waco, Texas; University of Louisville Medical Department, Louisville, Ky., 1895; member of the State Medical Association of Texas; served in the M. C.,

U. S. Army, during the World War; aged 51; died, December 19, in a local sanitarium, from mastoid abscess following an operation.

Claude Dalby Kellam ✦ Norfolk, Va.; University College of Medicine, Richmond, 1903; served in the M. C., U. S. Army, during the World War, with the rank of captain; formerly consulting surgeon at the U. S. Marine Hospital No. 29, Norfolk; aged 41; died, December 15, at the U. S. Naval Hospital.

Louis Sydney Bassford Robinson, Camp Kearney, Calif.; Medical School of Harvard University, Boston, 1901; served in the M. C., U. S. Army, during the World War; surgeon in U. S. Public Health Service Reserve, stationed at U. S. Veterans' Hospital No. 64; aged 48; died, December 17, at San Diego.

Charles A. Wilcox, Amboy, Ill.; Rush Medical College, Chicago, 1870; formerly mayor of Amboy; at one time postmaster of Ottawa, and coroner of La Salle County; member of the board of education; for several years surgeon for the Illinois Central Railroad Company; aged 75; died, December 23.

Edward Lindon Mellus, Brookline, Mass.; Jefferson Medical College of Philadelphia, 1878; member of the New England Society of Psychiatry and the American Association of Anatomists; retired thirty years ago to take up research work in neurological physiology; aged 74; died, December 17.

Louis Willard Luscher, Kansas City, Mo.; College of Physicians and Surgeons of Kansas City, Kansas City, Mo., 1879; member of the Missouri State Medical Association; formerly professor of surgery at the University Medical College, Kansas City, Mo.; aged 64; died, December 26.

Lemuel Hart Neville, Galion, Ohio; Medical College of Ohio, Cincinnati, 1894; member of the Ohio State Medical Association; aged 53; died, December 25, at the Protestant Hospital, Columbus, from acute dilatation of the heart, following an operation on the gallbladder.

John C. Dunlavy, Sioux City, Iowa; College of Physicians and Surgeons, Keokuk, Iowa, 1879; University of Louisville Medical Department, Louisville, 1882; formerly consulting oculist to the Samaritan Hospital; aged 73; died, December 18, from heart disease.

William Lloyd Shannon, Vancouver, B. C., Canada; McGill University Faculty of Medicine, Montreal, Que., 1911; Medical School of Harvard University, Boston, 1915; aged 34; died, December 26, from the effects of poison, presumably self-administered.

Franklin Watson, Willow Grove, Pa.; Hahnemann Medical College and Hospital of Philadelphia, 1897; member of the Medical Society of the State of Pennsylvania; aged 53; was found dead in bed, December 26, from heart disease.

Thornton Craig, Capay, Calif.; McGill University Faculty of Medicine, Montreal, Que., Canada, 1876; member of the Medical Society of California; aged 77; died, December 20, at the Woodland Sanitarium, Woodland, from enteritis.

George Isaac Hemingway, Poughkeepsie, N. Y.; University of Vermont College of Medicine, Burlington, 1897; member of the Medical Society of the State of New York; aged 55; died, December 23, following a long illness.

John R. Wheless, Spring Hope, N. C.; College of Physicians and Surgeons, Baltimore, 1891; member of the Medical Society of the State of North Carolina; aged 54; died, December 4, from cerebral hemorrhage.

Samuel Gaston Huff, Santa Ana, Calif.; St. Louis Medical College, St. Louis, Mo., 1870; formerly superintendent of the San Bernardino County Hospital, San Bernardino; aged 78; died, December 16, from senility.

William Wesley Reed Hitchcock ✦ Los Angeles; Rush Medical College, Chicago, 1879; Bellevue Hospital Medical College, New York, 1881; president of the California Hospital; aged 68; died, December 17.

Robert Hall Pepper, Huntington, W. Va.; Homeopathic Hospital College, 1885; member of the West Virginia State Medical Association; aged 60; died, December 23, following an operation for carcinoma.

Edward F. Milholland, Baltimore; University of Maryland School of Medicine, Baltimore, 1858; practitioner in Baltimore for more than half a century; aged 85; died, December 23, from pneumonia.

John Dickinson Mast, Reamstown, Pa.; Hahnemann Medical College and Hospital of Philadelphia, 1919; aged 34; died, December 12, at St. Joseph's Hospital, Lancaster, from typhoid fever.

Orson T. Staufft, Pittsburgh; Medical Department of Western Reserve University, Cleveland, 1883; member of the Medical Society of the State of Pennsylvania; aged 64; died, December 23.

Maria M. Romine, Harveysburg, Ohio; Woman's Medical College of Cincinnati, 1894; member of the Ohio State Medical Association; aged 73; died, December 16, following a long illness.

Fred Luther Osgood ✦ Townsend, Vt.; University of Vermont College of Medicine, Burlington, 1889; member of the board of education; aged 64; died, December 30, from pneumonia.

George Manley Atwood, Bradford, Mass.; Medical School of Maine, Brunswick, 1884; member of the Maine Medical Association; aged 67; died suddenly, December 23, from heart disease.

William Vann Rumph, Fort Worth, Texas; Memphis Hospital Medical College, Memphis, Tenn., 1904; member of the State Medical Association of Texas; aged 54; died, December 20.

A. Marion Wassam ✦ Galveston, Texas; Medical College of Ohio, Cincinnati, 1873; formerly member of the board of education; at one time coroner; aged 76; died, December 12.

Michael Francis Sullivan, Lawrence, Mass.; College of Physicians and Surgeons, Boston, 1891; member of the Massachusetts Medical Society; aged 65; died, December 25.

Harry Rulison, Albany, N. Y.; Albany (N. Y.) Medical College, 1905; aged 40; was found dead in his room at a New York hotel, December 12, from heart disease.

Hiram Herbert Rust, Gig Harbor, Wash.; University of Vermont College of Medicine, Burlington, 1876; aged 84; died suddenly, December 14, from heart disease.

Robert Joseph Marsh ✦ Portland, Ore.; University of Pennsylvania School of Medicine, Philadelphia, 1898; aged 53; died, December 18, from pernicious anemia.

Charles J. Hull, Carthage, N. Y.; Eclectic Medical College of the City of New York, 1881; formerly village president and health officer; aged 65; died, December 23.

Isaac N. Woodman, Morrisville, Pa.; Hahnemann Medical College and Hospital of Philadelphia, 1893; aged 54; died, December 14, from cerebral hemorrhage.

Frank Major Beard ✦ Shelbyville, Ky.; Medical Department University of Louisville, Louisville, 1893; aged 53; died, December 20, following a long illness.

Mary Helen Cullings, Syracuse, N. Y.; University of Michigan Medical School, Ann Arbor, 1886; aged 68; died, December 25, from pneumonia.

Samuel Howard Wilson, Mechanicsville, Pa.; Jefferson Medical College of Philadelphia, 1881; aged 67; died, December 18, from diabetes mellitus.

Frank J. Lebangood, Louisville, Ky.; Louisville Medical College, Louisville, Ky., 1879; aged 72; died recently, from acute articular rheumatism.

Henry Garey, Pittsburgh; Jefferson Medical College of Philadelphia, 1884; Confederate veteran; aged 94; died, December 18, from senility.

Daniel Schmidt, Jr., New York; Bellevue Hospital Medical College, New York, 1881; aged 62; died, December 15, from cerebral hemorrhage.

Charles E. Terrell, Fort Worth, Texas (licensed in Texas under the act of 1907); aged 59; died, December 16, following a long illness.

Mary Elizabeth Nutter, Norfolk, Va.; Boston University School of Medicine, Boston, 1884; aged 71; died, October 4, from senility.

William Burton Olds, Attica, Ohio; Bennett College of Eclectic Medicine and Surgery, Chicago, 1882; aged 78; died, December 29.

John Claude Hollis ✦ Oakland, Calif.; College of Physicians and Surgeons, Chicago, 1906; aged 41; died, December 17.

Walter Melvin Hornby, Philadelphia; Medico-Chirurgical College of Philadelphia, 1895; aged 51; died, December 28.

David K. Douthett, Osceola, Iowa (licensed, Iowa, 1887); aged 67; died suddenly, December 19, from heart disease.

Vardiman M. O. McDowell, North Little Rock, Ark. (licensed, Arkansas, 1903); aged 65; died, December 18.

Alva B. Coons ✦ Georgetown, Ky.; Kentucky School of Medicine, Louisville, 1886; aged 62; died, December 23.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

CULTURE-LAC OMITTED FROM N. N. R. AND OPTOLACTIN NOT ACCEPTED

Report of the Council on Pharmacy and Chemistry

The Council has authorized publication of the following reports.

W. A. PUCKNER, Secretary.

Culture-Lac

"Culture-Lac" is described in New and Nonofficial Remedies, 1922, as a culture of *Bacillus bulgaricus* manufactured by the Geck Laboratories, New York. The Special Pharmacal Products Co., Inc., Buffalo, N. Y., has advised the Council that it now owns and manufactures Culture-Lac. The product now marketed, however, is not the preparation described in New and Nonofficial Remedies as Culture-Lac but is said to be a culture containing *Bacillus acidophilus* and *Bacillus bulgaricus*.

In the advertising of Culture-Lac issued by the Special Pharmacal Products, Inc., it is stated:

"Owing to the difference of opinion of the medical profession as to the therapeutic value of the *Bacillus acidophilus* and the *Bacillus bulgaricus*, this laboratory, considering that the types were similar, also that both thrived in the same medium, decided to combine them and by so doing overcome any further objection."

This is not a valid reason for the sale of a mixture of *B. acidophilus* and *B. bulgaricus*. On the contrary, it is essential to therapeutic progress and in the interest of sound therapy that these two bacilli should be administered independently of each other.

The Council has decided that, on the basis of the present available evidence, preparations of *B. acidophilus* may be considered for admission to New and Nonofficial Remedies. In order, however, that an early estimate of the value of the bacillus as a therapeutic agent may be gained, the Council will admit such preparations only on condition that they are marketed under a properly descriptive name. Furthermore, the Council will not consider for acceptance any preparation containing *B. acidophilus* in admixture with other organisms unless acceptable evidence is presented to warrant the mixture.

In the advertising for the new Culture-Lac it is asserted:

"In considering divergent opinion as to whether the *Bacillus acidophilus* or the Bulgarian bacillus is the more active as intestinal antiputrefactives, it must be remembered that the fact has been thoroughly established by Metchnikoff and many other investigators, that functioning independently or both acting together when administered in combination, have marked therapeutic force."

This is an unwarranted therapeutic claim. The therapeutic use of *B. acidophilus* is distinctly in the experimental stage. Although there is evidence that the administration of sour milk products is at times beneficial, the theories advanced by Metchnikoff are entirely unsupported by scientific evidence, and no one subscribes seriously to these opinions at the present time.

The Council directed that the Culture-Lac of the Geck Laboratories be omitted from New and Nonofficial Remedies because it is off the market. The Council declared the Culture-Lac of the Special Pharmacal Products Co., Inc., inadmissible to New and Nonofficial Remedies (1) because there is no acceptable evidence to show that the administration of a mixture of *B. bulgaricus* and *B. acidophilus* is rational; and (2) because the preparation is marketed with unwarranted therapeutic claims.

Optolactin

Optolactin is the proprietary, nondescriptive name applied by Fairchild Bros. and Foster to a tablet said to contain mixed cultures of the *B. bulgaricus* A and *B. acidophilus*. In the advertising the following reason for the marketing of this mixture is offered:

"This product, Optolactin, will enable those who attach a special importance to the *Bacillus acidophilus* to try it in combination with bacilli already well known. . . . And those who already use the *Bacillus bulgaricus* may employ this mixed culture with the assurance that Optolactin has all the qualities of the *Bacillus bulgaricus* of the Fairchild culture and with such new and important properties as may be derived from the inclusion of the *Bacillus acidophilus*."

Here, again, it must be emphasized that this is not a valid reason for the combination. In the interest of therapeutic progress and sound therapy it is essential that these two bacilli should be administered independently of each other.

In the circular which accompanies the trade package of Optolactin it is stated that *B. bulgaricus* "has now acquired a place in therapeutics for the purpose for which proposed by Metchnikoff and his colleagues, with his theory of auto-intoxication, disease resulting therefrom, and the ingestion of these bacilli in combating it." In consideration of the fantastic and erroneous statements which appear in the lay press about "auto-intoxication" and the endless ills said to result therefrom, this statement is likely to lead to the ill-advised use of Optolactin by the public.

The Council declared Optolactin inadmissible to New and Nonofficial Remedies (1) because there is no acceptable evidence to show that the administration of a mixture of *B. bulgaricus* and *B. acidophilus* is rational; (2) because the name is not descriptive of the composition of the preparation; and (3) because the circular accompanying the package is likely to lead to the ill-advised use of Optolactin by the public.

Correspondence

STERILITY FROM USE OF RADIUM

To the Editor:—Within the last few years there have come to my attention cases of sterility caused by handling radium. Nearly all the patients were young and healthy, and attracted by the steady salary promised, without much knowledge as to the action of radium on their future physical condition and without being informed as to that fact by those supposed to know. The employment, as a rule, is steady and practically continuous until these unfortunates come to realize that through the constant handling of radium they have become sterile. Young laymen, even most of the medical men in such employment, do not know and realize the dangers when they first start. It is impossible for men handling especially big dosages of radium to wear heavy enough lead aprons to be protected. Applicants should be informed of all the dangers, and decide their course with full knowledge in advance of the risks they are to take. Another way would be for such institutions to have enough men for each position to employ them for three months each year, giving long periods of freedom from the action of radium.

M. A. VARZHABEDIAN, M.D., Chicago.

THE NAMES OF PROPRIETARY PREPARATIONS

To the Editor:—May I express my most sincere approval of the ruling of the Council on Pharmacy and Chemistry for excluding from New and Nonofficial Remedies drugs (however valuable their therapeutic action may be, or however honestly described their chemical constituency) not distinctly named to show the active drug that they contain. Esterol should be "benzyl succinate," prepared by Frederick Stearns & Company.

It should be *suggested* by its name that any drug or preparation acts differently from the basic drug it contains. A drug or preparation should be ordered by its name, and then the preferred maker specified, if desired. For ihstance:

Elixir Glycerophosphates (the name of the maker of the preparation desired); Antipneumococcic Serum (the name of the maker of the preparation desired); Novocaine (the name of the maker of the preparation desired); Aromatic Fluidextract of Cascara (the name of the maker of the preparation desired); Fluidextract of Ergot (the name of the maker of the preparation desired); Elixir of Pepsin (the name of the maker of the preparation desired); Peroxide of Hydrogen (the name of the maker of the preparation desired); Tablets of Ovarian Substance (the name of the maker of the preparation desired); Tablets of Thyroid Substance (the name of the maker of the preparation desired), etc.

If a particular make of a drug is preferred, every physician has as much right to specify the brand desired as he has to choose the drug he will use in a given case.

The patent and trademark laws should be amended so that the originator of a particular method of securing purity of a drug, or the discoverer of a new valuable synthetic drug, should be allowed to patent the drug under its chemical name, or at least under a name that is distinctive of its constituency, and then every other firm should be allowed to make that drug and sell it under its patented name, paying a royalty to the discoverer or originator of the drug.

Medicine and medical treatment must be scientifically simplified.

It is regretable that proper names for the different diseases or syndromes and symptoms and signs are multiplying until their name is legion. Every man should be honored in early descriptions of the disease or condition that he has discovered, but it is deplorable to insist that every educated medical man shall know every sign, symptom and disease by some one's proper name.

OLIVER T. OSBORNE, M.D., New Haven, Conn.

AUTOCESAREAN SECTION IN A MOUSE

To the Editor:—Oct. 17, 1922, an ordinary brown mouse confined with others in a cage at the Ohio penitentiary was seen to be gnawing her abdomen. The attention of one of the superintendents, R. E. Moore, and a foreman, James Syfers, was called to the mouse, and they watched her until she had eaten an opening into her abdomen and removed four mice. Two of the mice were apparently still living, but soon died. The mouse did not seem to be at all disturbed by her operation, but ran around in her cage as though nothing had happened. My attention was incidentally called to the case a few days later by the warden of the penitentiary, Mr. P. E. Thomas. I visited his office and saw the mouse, which then showed simply a well healed scar.

After discussing the case with a number of my colleagues, it seemed important to know whether the operation had been a straight cesarean section, or an opening into an extrauterine fetal sac. In the interest of science, therefore, the warden surrendered the mouse, which was turned over to Prof. D. S. White, dean of the veterinary department of the Ohio State University. Examination disclosed that the pregnancy had been in the right horn of the uterus, and had apparently been normal, so that no reason was discovered why the mouse relieved herself in this way.

In conversation, Professor White stated that he had never heard of any such occurrence. Correspondence with several laboratories where large numbers of mice are utilized for scientific purposes has not elicited a report of anything of this sort. Dr. B. Merrill Ricketts of Cincinnati reported some years ago two cases of autocesarean section in the human female.

In a communication (through Dr. B. Merrill Ricketts) from the Bureau of Animal Industry of the U. S. Department of Agriculture, the statement is made that the library files of that department fail to reveal any data as to self-inflicted cesarean section in dumb animals, and the suggestion is made that no such case has been reported in veterinary literature.

J. F. BALDWIN, M.D., Columbus, Ohio.

DIAGNOSTIC VALUE OF BILIARY DRAINAGE

To the Editor:—I have read with considerable interest (THE JOURNAL, Dec. 23, 1922, p. 2129) the report by Fitz and Aldrich on chemical and physical examinations of bile removed at operation from gallbladders in a series of known gallbladder conditions. According to their results, they are not able to correlate their findings with any of the known gallbladder changes in the conditions they were investigating. Consequently, they have assumed that biliary studies according to the methods of Lyon cannot be of much diagnostic significance. So far as I am aware, neither Lyon and his co-workers, nor those who have made use of his methods, have ever based much on the physical and chemical analyses of bile obtained by this method of drainage. To be sure, the specific gravity, viscosity, color, etc., are noted, but usually do not have much weight in the diagnostic balance. We know that these characteristics of bile are very variable even in normal subjects at different times under different conditions. What is more important than any of these is the bacteriologic study of bile as obtained by the Lyon methods. The chief diagnostic value, to my mind, of this method of biliary study lies in the facility with which it lends itself to bacteriologic investigation of the gallbladder. Had Fitz and Aldrich been able to compare preoperative and postoperative bacteriologic findings in their series of cases, they would have learned that the Lyon tests were of practical diagnostic value. Furthermore, it is not clear that their microscopic examination of the bile specimens has been as thoroughly made as possible. In scientific work one cannot base far-reaching conclusions on incomplete studies, and therefore I believe that Fitz and Aldrich are not justified in throwing doubt on the value of the Lyon methods.

E. L. SHAFFER, PH.D., Trenton, N. J.
Assistant Pathologist, St. Francis Hospital.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

DETERMINATION AS TO PREVIOUS VIABILITY OF INFANT FOUND DROWNED

To the Editor:—I am to appear in court to testify in an infanticide case. I had performed the necropsy and used the hydrostatic test on the lungs to determine whether the child was born alive. The lungs floated. How far can one interpret the findings of this test?

Y.

ANSWER.—The following statement from the "Text-Book of Legal Medicine," edited by Frederick Peterson and Walter S. Haines, 1903, p. 59, answers the question asked:

"In order to determine whether or not respiration has taken place, the following procedure is practiced: The height of the diaphragm is determined before the chest is opened (when respiration has fully taken place the diaphragm reaches to the fifth or the sixth rib; otherwise only to the fourth); the trachea is ligated in the neck before opening the chest; then the chest is opened, and the pleurae, pericardium and heart are examined; the pharynx, larynx and trachea, above the ligature, are also opened and examined. The organs of the chest are now removed in toto, the trachea being divided above the ligature, the heart and the thymus gland separated, and the lungs placed in a basin of cold, clean water. In

case they float freely, respiration has undoubtedly taken place; if the lungs sink, then the test is not decisive. The lungs, under such circumstances, are to be incised and note taken as to whether they crepitate or not, and whether air-bubbles appear when parts are compressed below the surface of the water. Furthermore, the lungs must be separated into lobes, the lobes into minute pieces, and the hydrostatic test again applied. In this way it may be possible to determine that air has gained entrance into certain parts of the lung in sufficient quantity to prevent small pieces from sinking.

"In the case of decomposition and the possible production on that account, in the lungs, of sufficient gas to buoy them up in the water, then a number of small pieces from the lungs are to be placed between the folds of a towel, and thoroughly compressed between two flat surfaces, such as between the floor and a board, exerting pressure by standing on the latter. The gas due to decomposition is pressed out, and the pieces from atelectatic, decomposed lungs will sink when thrown in the water after this treatment; inspired air, on the other hand, cannot be pressed out, and the pieces from inflated lungs continue to float."

ADMINISTRATION OF SODA AND GLUCOSE SOLUTIONS

To the Editor:—I am writing regarding the administration of soda and glucose solutions by hypodermoclysis. We had been having trouble with sloughing of the tissue around the site of the injection. I made up a 5 per cent. solution and sterilized by the fractional method in the Arnold sterilizer. My solutions are clear, with a slight darkening of the glucose. But even now we are having the same trouble. To cite an example: A woman with the dengue was given four injections. One was given in each breast and one in each thigh. They were all given the same day and by the same nurse. The one on the right thigh, which was the third given, caused considerable pain, the skin first becoming red and then peeling off, leaving a bluish tint, which later changed to a dark blue, became necrotic and sloughed. In another case, a trained nurse gave the injections into the breasts, the right first and then the left. These were given at the same time, and later sloughing occurred in the left breast. What is the cause for this, and how may we remedy it? Is the fault with the preparation, or is the amount of each injection too large?

————, Canada.

ANSWER.—The necrosis produced by the "soda and glucose solution" hypodermoclysis is, no doubt, due to its excessive alkalinity. Sloughing has occurred after subcutaneous injection of 2 per cent. solutions of sodium carbonate. Our correspondent does not state the exact strength of the solution; but, assuming that he used 5 per cent. of sodium bicarbonate, the irritation resulting from such a solution could be readily explained, especially if the heating for sterilizing is not done in such a way as to prevent loss of carbon dioxid. For, when the sodium bicarbonate solution is heated, it gives off carbon dioxid and is converted into the much more alkaline and destructive sodium carbonate. Such a solution may be given by proctoclysis or by intravenous injection; but it is not suitable for hypodermoclysis.

DOSAGE OF CINCHOPHEN

To the Editor:—In what dosage and amount should cinchophen be used? I find in some of the advertising circulars the directions to discontinue from seven to ten days and repeat, and I have been informed that there is danger of uric acid calculi forming in the kidneys if it is used continuously. GEORGE D. CARNES, M.D., South Haven, Mich.

ANSWER.—The following dosage statement is given in New and Nonofficial Remedies, 1922: "In gout the dose of cinchophen is from 0.5 Gm. (8 grains) four times a day to 1 Gm. (15 grains) three times a day suspended in large quantities of water. In order to prevent the precipitation of free uric acid from the urine with possibly resulting renal colic, Weintraud considers it necessary to administer simultaneously 15 Gm. (225 grains) of sodium bicarbonate in the course of the first day, and from 5 to 10 Gm. (75 to 150 grains) on the following days. In articular rheumatism, Heller prescribes daily doses of from 3 to 5 Gm. (45 to 75 grains)."

In the treatment of rheumatic fever, Hanzlik, Scott, Weidenthal and Fetterman (THE JOURNAL, June 18, 1921, p. 1728) state that intensive and massive doses of cinchophen are necessary for complete relief, just as with salicylate. One gram of cinchophen (or neocinchophen) was administered every hour until definite symptoms of drug action were manifested. Then the medication was stopped; and, if no relief was obtained, a full therapeutic (toxic) dose was administered in the usual way. In the cases reported by the authors, some improvement appeared after from 3 to 6 gm. of cinchophen; further relief was not demonstrable until after from 6 to 10 gm. had been administered; complete relief occurred only when patients had received a total of from 10 to 13 gm.

In cases of chronic disease, it has been recommended to administer cinchophen for two or three days; then, not to give it for the next ten or fourteen days, and then repeat. This seemingly is based on an early communication of Weintraud, who thought its use in this manner would serve as a "prophylactic." Such directions do not appear in "Useful Drugs," "New and Nonofficial Remedies" or recent works on pharmacology and therapeutics.

VENTILATION OF ROENTGEN-RAY ROOMS

To the Editor:—In the application of deep roentgen-ray therapy, I am troubled considerably with the fumes of ozone and nitrous oxid throughout my office.

I have installed an exhaust ventilating system, but still the fumes linger in my rooms for a considerable length of time after the deep therapy treatment is administered. Unfortunately, my office space is so arranged that I have a long space, 20 by 80 feet, with a 13 foot ceiling, which affords ventilation only at the two distant ends. The side walls have no windows on account of adjoining buildings.

Would the installation of several air purifying devices be of any help in further purifying the air in my office suite? Are there any other air purifying devices that would be helpful?

HAROLD SWANBERG, M.D., Quincy, Ill.

ANSWER.—We know of no specific chemical action whereby air-purifying devices absorb the nitrous oxid of the air in rooms in which a high tension electric current has produced a breakdown of the normal chemical constituents of the air. Most such devices act to disguise odors. As to a means of taking care of the undesired gases in roentgen-ray therapy, there is nothing but actual change of the air in the room as rapidly as the nitrous oxid is formed. Open windows with the assistance of a fan or an exhaust apparatus are the only successful means for this purpose.

BIOLOGIC PRODUCTS FOR PREVENTION OF PNEUMONIA OR INFLUENZA

To the Editor:—Is there any vaccine or serum that is worth anything as a preventive of influenza, or as a preventive of pneumonia following influenza? Is there any such product that is worth using during convalescence? J. F. MARTIN, M.D., Benson, N. C.

ANSWER.—The use of biologic products prepared from pneumococci and influenza bacilli is still in the experimental stage. Some products prepared from pneumococci have been accepted by the Council on Pharmacy and Chemistry for New and Nonofficial Remedies. A list may be found in that book, together with a brief discussion as to the experimental evidence on which the use of the products is based.

PRESENT STATUS OF "INSULIN"

To the Editor:—Will you kindly give me information regarding a preparation by the name of "Insulin," said to be manufactured by a professor from the Medical Department of the University of Toronto, who claims it is a specific in the treatment of diabetes?

W. E. RAMSAY, M.D., Houston, Texas.

ANSWER.—In THE JOURNAL, January 6, the present status of this product is discussed editorially. It is pointed out that the product is still in the experimental stage and that it seems to be of considerable promise, but that it is not yet available for general application in the treatment of the disease for which it is specific.

CHRONIC RESISTANT MACULAR ERYTHRODERMA

To the Editor:—Have you any literature on a skin trouble known among skin men as chronic resistant macular and maculopapular scaly erythroderma? Do the skin men recognize this condition, and if so, has it ever been classified? J. A. MCCULLOCH, M.D., Maryville, Tenn.

ANSWER.—Resistant maculopapular scaly erythroderma is one of several names of a dermatosis that is rare but well known by dermatologists. There are several varieties of the condition. The commonest used name for it is parapsoriasis (the condition is not related to psoriasis). A better but less frequently used name is parakeratosis variegata, the name used by Unna, Santi and Pollitzer in the original description of the condition. Under one of these names this dermatosis is discussed in all of the modern dermatologic textbooks.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALASKA: Juneau, March 6. Sec., Dr. Harry C. De Vighne, Juneau.
KANSAS: Topeka, Feb. 13. Sec., Dr. Albert S. Ross, Sabetha.
NATIONAL BOARD OF MEDICAL EXAMINERS: Written examination in Class A medical schools. Part I and II, February 12-14 and February 15-16. Sec., Dr. John S. Rodman, 1310 Medical Arts Bldg., Philadelphia. Application for the February examination must be sent in by January 1.
PENNSYLVANIA: Philadelphia, Jan. 30-Feb. 3. Sec., Mr. C. D. Koch, Professional Credentials Bureau, 422 Perry Bldg., Philadelphia.
SOUTH DAKOTA: Pierre, Jan. 16. Director, Dr. H. R. Kenaston, Bonesteel.
VERMONT: Burlington, Feb. 13. Sec., Dr. W. Scott Nay, Underhill.

POSTGRADUATE STUDY ABROAD

WILLIAM A. BRAMS, M.D.
CHICAGO

This article is written so that the physician contemplating a trip abroad for postgraduate work may know what courses he can get and how he can get them.

VIENNA

Vienna has been the center of postgraduate medical education for many years. There is in that city an organization of American physicians ready to help the American physician in the selection of courses and in finding board and lodgings. This organization is the American Medical Association of Vienna, which has headquarters at the Cafe zur Klinik, IX Wien, Spitalgasse and Lazarettstrasse, Austria. There are between 100 and 125 American physicians in this society, and a secretary who will give any information requested.

A list of desirable and moderately priced hotels, boarding houses (pensions) and private rooms without board is kept for the convenience of members and strangers. The various courses offered by the Viennese instructors and professors are posted, together with the hours, duration, cost, nature of the work and name of the teacher. Special courses may also be arranged for, since the organization is in close touch with the teaching bodies of the various hospitals and the university.

At the end of the course of study, a certificate is given by the faculty of the University of Vienna, stating the length of time and the subjects of each course taken. For this a small fee is charged.

Good room and board costs from $7 to $10 a week for one person. This does not include such extras as special taxes, small tips and special food. The total cost is much less than in the United States for similar accommodations. It is well to arrange beforehand, if possible, for quarters. This may be done through the medical association or through some friend.

The courses cost from $2 to $5 an hour. This means that the entire group of from two to ten or more agree to pay the teacher this sum, and the amount is equally divided among the members of the class. For example, each member of a course costing $5 an hour pays 50 cents an hour, if there are ten in the group. Private courses can also be arranged for in any subject. The average course covers from twenty to twenty-five hours, and this may be repeated as often as one likes; but private courses run in accordance with a previous arrangement. The American physician will find that, on the whole, the teachers and native population are quite hospitable and ready to help in many ways. There need be no fear on this point, as the average American is well liked and will get along very well.

While the housing and food situation for the native is a serious matter, the American, with the rate of exchange so much in his favor, will get almost anything he wishes in the way of food and lodging. There is a shortage in some things, such as milk, but for the average man the food will be quite satisfactory.

The usual method of procedure is to report at once to the office of the association and to ask the secretary, who speaks both English and German, for a list of courses or such other information as may be desired.

The eye, ear, nose and throat courses are excellent. The chief advantages are in the fundamental branches, but the opportunities for doing major operations are limited. This is because the government now limits the powers of the professors and instructors over the patients; and this, together with the large number of assistants who are also anxious to operate, tends to limit the actual practical work for the American physician.

Very good work may also be obtained in pathology, internal medicine, roentgenology, neurology, psychanalysis and dermatology. This list does not exhaust the subjects available, and the physician who is interested in going abroad to study will always find something of interest in this city.

BERLIN

Berlin also offers good opportunities for postgraduate work, especially in internal medicine, gastro-enterology, ear, nose and throat, and pathology.

Living conditions for the American are good, and he will find no difficulty in selecting suitable rooms and obtaining good food during his stay in this city. The prices for courses are about the same as in Vienna, and they are given in about the same way. Letters certifying to the work done in the various places in Berlin will be given by the teachers on the completion of the various courses. The American may expect to find that he will be requested to pay more for things than Germans or foreigners whose rate of money exchange is not so high as ours, but even then it is possible to live cheaper in Berlin than in the United States.

PARIS

Paris offers some very good opportunities for postgraduate work in neurology, internal medicine and skin diseases, and good work may be obtained in roentgenology and in tuberculosis. At the office of information of the School of Medicine, rue Ecole de Médecine, information can be obtained relative to courses and opportunities for work in the various hospitals and clinics. The secretary in charge speaks English, and is ready to furnish any information desired.

The living expenses in Paris are higher than in Vienna or Berlin, but the fees for the courses are much lower. The average course is from 100 to 200 francs per course for ach person, and at the clinics there are many opportunities for work for which there is no charge. Arrangements for such free work must be made with the head of the clinic. Certificates from the faculty of medicine of the University of Paris are given for courses or work completed at any of the hospitals or clinics.

While it is not absolutely necessary for the physician to be familiar with German or French, he will profit much more if he understands these languages, as many of the professors do not speak English. Some of the best courses in Vienna, Berlin and Paris are given in the native language, but courses in English may also be had in Vienna, especially in eye, ear, nose and throat and internal medicine. In Paris and Berlin there are few courses in English, so that some familiarity with the native language is important if the physician wishes to get the most out of his stay abroad.

LONDON

Information in regard to graduate courses in London can be obtained by writing to Mr. George E. MacLean, Director of the American University Union, 50 Russell Square, London, W. C. 1.

Book Notices

DISEASES OF THE STOMACH AND UPPER ALIMENTARY TRACT. By Anthony Bassler, M.D., F.A.C.P., Professor of Gastro-Enterology, New York Polyclinic Medical School and Hospital. Fifth edition. Cloth. Price, $8. Pp. 977, with 244 illustrations. Philadelphia: F. A. Davis Company, 1922.

The question arising in the mind of the reader who peruses the textbooks appearing from time to time is whether or not some of them are, so to speak, written to order. Is it really necessary in a book devoted to clinical gastro-enterology to devote almost one third of the volume to a discussion of facts that are to be obtained in any modern textbook of physiology and laboratory diagnosis? It seems that a clear, concise description of one technical procedure, the one of choice of the author, would leave the reader a much better impression than a maze of procedures, some simple, most of them too complicated for the average reader, who, as often as not, is confronted with the statement, after a particularly complicated technic has been described, that this method is not so good as another. At a time when there seems to be a growing feeling of distrust of the value of complicated methods of the examination of gastric contents, simplicity is the desideratum. Also, why devote twenty-two pages to urinalysis in a book on gastro-enterology? The author lays considerable importance on the work of Alvarez on peristalsis, describes in detail the methods of fractional analysis, and has enlarged the section on roentgenology of the gastro-intestinal tract. Bismuth, rather than barium, seems to be the choice of the author, as the latter is not mentioned. Credit must be given for the excellent presentation of the subject of anamnesis. In a domain of clinical medicine in which the history is the most important clue, if not the main diagnostic light in 75 per cent. or more of the cases, too much importance cannot be laid on this point. The section on ulcer is well written. It is unfortunate, however, that the author fails to consider cholecystitis, from which, at times, nothing is with more difficulty differentiated than ulcer. The diagnosis of gallstones is mentioned; chronic inflammation of the gallbladder, however, offers many more obstacles in diagnosis, on account of the similarity in symptoms, gastric content examination, and even roentgen-ray examination. The occurrence of hematemesis in 30 per cent. of all cases of ulcer seems to be very high. Formerly, hyperacidity and gastrosuccorrhea were considered entities. Now many of them are recognized either as ulcer or as the result of extragastric conditions. Careful observation of these would tend to lower the high percentage of hematemesis in ulcer. It is questionable whether roentgenologists will subscribe in their entirety to Dr. Bassler's statements; for example, that residue after six hours, acute fish-hook stomach, delayed pyloric opening and settling of the bismuth to the lower pole of the stomach are characteristic of gastric ulcer, and that gastric residue, dilatation of the cap, vigorous peristalsis, early free opening of the pylorus with early cleaning of the stomach, and lagging of bismuth in the duodenum are characteristic of duodenal ulcer. A happier statement would have been that these phenomena are observed at times in gastric and duodenal ulcer. In fact, they may occur in extragastric conditions, while duodenal stasis is far more frequent in gallbladder lesions. The subject of treatment is very well covered. It is not clear, however, why Dr. Bassler advises that transfusion in hemorrhage, certainly a life-saving procedure, should not be done too early. The subject of gastritis seems to be hereditary in character. Textbooks repeat that it is one of the commonest gastric ailments. Clinically, however, in the practice of a large number of gastro-enterologists, except as secondary to extragastric condition or carcinoma, it is a rarity. Dr. Bassler is one of the many who see numerous cases of gastritis. The rôle of the typhoid bacillus in the causation of gallstones and cholecystitis, while important, does not warrant the statement that "cholecystitis is mainly typhoidal in character." Rosenow has shown the importance of the streptococcus in the causation of cholecystitis. A few points in gastric physiology mentioned by Dr. Bassler do not seem to be in accord with modern physiology. He states that water and sugar solutions are absorbed by the stomach. McLeod, in "Physiology and Biochemistry in Modern Medicine" (1918, p. 455) states what appears to be the prevalent opinion, that water is not absorbed and that glucose only in concentrated solution is absorbed from the stomach. It might also be noted that, far from being impaired, the gastric emptying is often increased in conditions of achylia. Electricity finds many uses in the hands of the author, for the pain of chronic gastritis, for motor insufficiency, for chronic constipation and for psychic depression. It would be interesting to learn whether Dr. Bassler considers these as psychic aids or actual therapeutic measures, enhancing peristalsis as the case may be. There are numerous excellent illustrations, especially of pathologic specimens, and reproductions of roentgenograms, numerous diet lists, and prescriptions.

MOSQUITO ERADICATION. By W. E. Hardenburg. Cloth. Price, $3. Pp. 248, with 146 illustrations. New York: McGraw-Hill Book Company, Inc., 1922.

The public is beginning to realize that the average town can free itself from malaria and other mosquito-borne diseases for much less than it costs to endure them. Practical demonstrations, which the author recounts in this book, have been made at Roanoke Rapids, N. C., Electric Mills, Miss., and Crossett, Ark., by the St. Louis and Southwestern Railroad, and by the federal government during the mobilization of troops in the South. In a single year at Crossett before mosquito eradication was begun, physicians' calls for malaria totaled 2,502; the number of calls dropped the year anti-mosquito work started to 741, a difference of 1,761. Assuming that physicians made two calls to each case of malaria, the reduction effected by mosquito eradication work was 880 cases; and estimating the cost of each case at $15—wages lost, decreased efficiency, physicians' fees and medicine—the money value of the saving was $13,200. The actual cost of the antimosquito work for that year was $2,506.40. Such demonstrations of economy in malarial communities will increase when the public fully appreciates what has already been done. There is therefore a wide berth for a book which discusses how these campaigns are initiated, administered and carried on. The well known methods—draining, oiling, screening—of mosquito control are fully considered, and a chapter is devoted to the newer and less expensive method which employs certain fish. *Gambusia affinis* Baird and Gerard, a top minnow, is probably the best fish to use for general antimosquito work, within its habitat, of any of the North American fishes. It inhabits both fresh and brackish water, and in giving birth to its young—it is viviparous—it requires no special environment for depositing and hatching its eggs. One medium-sized female fish has been observed to eat as many as 165 mosquitos larvae in one day. The young fish begin eating a few hours after birth, and even at this stage will devour a mosquito larvae half as big as itself. The book is profusely illustrated.

LEÇONS DE PATHOLOGIE DIGESTIVE. (Cinquième Série). Par M. Loeper, Professeur agrégé à la Faculté de Médecine de Paris. Paper. Price, 15 francs net. Pp. 348, with 53 illustrations. Paris: Masson et Cie, 1922.

The lessons contained in the fifth series are so numerous and so interesting that properly to appreciate them requires much more experience with their subject matter than most American reviewers possess. The book reads somewhat like a romance, and even when the matter seems strangest it is most fascinating. It evokes skepticism and wonder; but the wonder is that of scientific inquiry, and as a result of reading the volume, one is much inclined to look for opportunities for testing the validity of much of its contents. Loeper, not carried away by undue enthusiasm for the powers of roentgenoscopy to elucidate all gastro-intestinal diseases, has gone deep into the chemistry, microscopy and clinical aspects of diseases of the stomach and intestine. Careful chemical tests are given; much stress is laid on pepsin, both in stomach juice and in urine; the relations between symptoms of gastro-intestinal disease and the nervous system are discussed. The theory that the vagus nerve absorbs toxins during the course of digestion is supported by some experimental data which on their face seem worth repetition. The

clinical pictures of lesser curvature ulcer, cancer and phlegmonous gastritis are painted in the best French style. The proteolytic ferments of cancer and their relation to cachexia, and the specific hemolysin and its relation to anemia form the subject matter of two most interesting chapters. Further details must be left to the reader.

Medicolegal

Power as to Quarantining Syphilitic Prostitutes

(Duncan v. City of Lexington et al. (Ky.), 244 S. W. R. 60)

The Court of Appeals of Kentucky, in affirming a judgment in favor of the defendants, says that the plaintiff asked for a writ of prohibition against the city, its health board and various health officers, to prevent the enforcement against her of a city ordinance providing for the quarantining of persons having syphilis. She asked also for a mandatory injunction ordering her release from quarantine. In the absence of proof, and under the pleadings, it must be taken as true that she was arrested on a warrant issued by the health officer on reasonable grounds for believing that she had syphilis, and was being detained, after an examination voluntarily submitted to which proved her infection, in the hospital quarters of the city jail with others of her own sex similarly affected; that in these quarters she was completely separated and removed from those confined in the jail under charge or conviction of crime; that the quarters were regularly designated as a quarantine area for such purpose, were properly equipped therefor, and in charge of competent physicians and nurses; and that she was detained therein in quarantine and for treatment only, and would be released as soon as the disease yielded to treatment and ceased to be communicable and a menace to the public health.

The principal, if not the sole, questions for decision were whether or not the city had the power to pass an ordinance providing for the arrest and detention in quarantine, in a properly equipped, managed and designated hospital, of known prostitutes afflicted with syphilis in an active, virulent, infectious and communicable form. That such power is inherent in a municipal corporation, even in the absence of constitutional or legislative provision with reference thereto, this court does not doubt; but this court need not decide or discuss that question, since Section 2059 of the Kentucky Statutes expressly authorizes the establishment of boards of health in cities such as Lexington, and Section 3058, which is a part of the charter of second-class cities, confers on the city council authority "to establish and enforce quarantine laws and regulations to prevent the introduction and spread of contagious diseases in the city, and within two miles thereof . . . to establish and maintain public hospitals within or without the city . . . to secure the general health of the inhabitants by any necessary measure . . . to constitute a board of health, and elect or appoint necessary health officers."

Construing these and several related statutes, this court held in *Hengehold* v. *City of Covington*, 108 Ky. 752, 57 S. W. 495, that cities of the second class are expressly authorized to empower the local health board to order the removal of persons infected with smallpox to a properly equipped pesthouse, and to enact "additional reasonable regulations to prevent the spread of epidemic diseases." By no course of reasoning can the fact that smallpox, an epidemic disease, was there involved differentiate that case from this one involving syphilis, a contagious disease, since the provisions of the charter of the city under which that conclusion was reached refer to contagious rather than epidemic diseases. Whether or not such power may be conferred on the health officer alone was also involved and decided in that case, the reason for holding that it could be so conferred being stated to be that "in such cases the necessity for immediate action is imperative, and it is not unreasonable to permit the health officer, or less than a quorum of the board, to order such removal in a case where it does not appear that the removal would endanger the patient's life." The court is, therefore, clearly of the opinion that the city had the power to authorize the health officer alone to cause the plaintiff's removal to and detention in the hospital quarters of the city jail especially prepared, equipped and designated as a quarantine area for persons afflicted as admittedly she was.

The court does not pass on the validity of the provision of the ordinance authorizing the health officer to quarantine persons "reasonably suspected of having" the diseases named, or on the legality of the plaintiff's arrest on orders of the health officer issued on information and belief merely, since it stood confessed on the record that she had syphilis in a contagious form, which was established by an examination voluntarily submitted to after her arrest.

Communication for Birth Report Not Privileged

(State v. Lassieur (Mo.), 242 S. W. R. 900)

The Supreme Court of Missouri, Division No. 2, says that complaint was made in this homicide case that a physician had been permitted to testify as to communications made to him by a woman witness. The state's counsel had elicited from the woman that she had become the mother of an illegitimate child shortly after the homicide, and on inquiry by the defendant's counsel she said that the deceased was the father. The prosecuting attorney sought to impeach this testimony by showing that the woman had told the physician whose testimony was objected to, and who had attended the woman at the birth of the child, that another than the deceased was the father, and that such information had been given to him, not to enable him to prescribe for her and to treat her, but for the purpose of gathering data for the state department of vital statistics. This communication was not privileged, and there was no error in permitting the physician to testify as stated.

Society Proceedings

WESTERN SURGICAL ASSOCIATION

Thirty-Second Annual Meeting, held at Minneapolis, Dec. 8 and 9, 1922

The President, DR. MILES F. PORTER, Indianapolis, in the Chair

Closure of Chronic Empyema Cavities by Use of Very Strong Surgical Solution of Chlorinated Soda and Gentian Violet

DR. W. D. GATCH, Indianapolis: Of seventeen cases of chronic empyema I have succeeded in closing the sinus in fourteen by the use of the so-called chemical method. Two patients died, but not from causes in any way connected with the treatment. One patient, with tuberculosis, still has a small sinus, but is able to work and earn a living. The other patients are well, at work, and practically without deformity. The treatment employed is devoid of danger, and is easily carried out. The strong surgical solution of chlorinated soda rapidly sterilizes the empyema cavity and destroys its thick wall at a rate which is not too rapid for safety. It also probably opens up pockets of pus not draining freely into the main cavity. Bronchial fistulas will close practically always when the empyema cavity with which they communicate is completely drained. Cavities infected with tuberculosis cannot be irrigated with this solution unless they have greatly thickened walls. Aqueous solutions of gentian violet can be used to destroy gram-positive organisms in these cavities. Empyema cavities can be sterilized and closed, and will be obliterated after a time. In such cases the thickened pleura will be absorbed completely. Reinfection of the contents of such a cavity does not necessarily require the reestablishment of drainage.

Surgical Significance of Mesenteric Lymphadenitis

DR. LEONARD FREEMAN, Denver: Mesenteric lymphadenitis is a common disease of children and young adults. It is characterized by enlargement of numerous lymph nodes,

usually small and soft; the infecting agent being, in many instances, the tubercle bacillus, presumably of the bovine type. The most prominent symptoms are: moderate pain, tenderness and rigidity, mostly in the right lower quadrant of the abdomen, often accompanied with slight fever, headaches, occasional colics, various gastro-intestinal symptoms, and loss of weight and energy. The disease is nearly always confused with appendicitis. Because surgeons are unfamiliar with the trouble, it is seldom recognized during operations. There is a strong tendency toward recovery, at least symptomatically, following laparotomy.

A New Pyelo-Ureteral Plastic Operation for Hydronephrosis

DR. ARNOLD SCHWYZER, St. Paul: The essential points of the method are: first, that the mucosa is not sutured, but brought into exact apposition. This reduces the danger of formation of concretion. Second, and more important, the slack and fold which is unavoidably produced by sliding the flap downward to the end of the slit in the ureter is taken care of at the upper end of the pelvic incisions, and the ureteropelvic junction does not become either kinked or puckered.

Pneumoventriculi Cerebri Following Fracture of Skull

DR. FRANK R. TEACHENOR, Kansas City, Mo.: As the presence of air in the cranial cavity or ventricles does not in itself cause any deleterious effects, treatment should be directed against its most common complications: (1) meningitis; (2) intracranial compression, and (3) its tendency in intracranial aerocele to the formation of cysts, by replacement of the absorbed air with fluid. Aseptic and antiseptic treatment of the wound of entrance of the air is of prime importance. Air in the ventricles is quite rapidly absorbed, and in the absence of indication for operative measures for the reduction of intracranial pressure, etc., may be ignored. In the cases of intracranial aerocele the air seems to be absorbed more slowly, and, on account of its tendency toward cyst formation, should be aspirated or drained. Drainage would also tend to lessen the danger of meningitis. The drainage or aspiration, if done, should be done early. The accompanying skull fracture and brain injury will usually indicate the type of treatment to be employed.

Endothelioma of Cheek

DR. EDMUND A. BABLER, St. Louis: These tumors are very hard to classify. They are all of mesoblastic origin, however, and belong in the broad group of sarcoma. A fairly large sized tumor of endothelial origin may present itself in the cheek without involving the skin or mucosa. The lymph glands of the neck may become involved fairly early and quite extensively, as in my case. The growth became sufficiently large to interfere with mastication and speech. The involvement of the lymph glands in our cases would indicate that quite a few of these cases undergo or are of malignant character.

Cancer and Benign Growths of the Female Breast

DR. DONALD MACRAE, JR., Council Bluffs, Iowa: I am opposed to the use of radium, the roentgen ray, cancer paste, or any other means of treatment except the knife. The earlier the cancer is removed by radical surgery, the greater the hope of permanent cure. A movable tumor within the mammary gland is probably not malignant. However, this examination alone should not satisfy the average surgeon. An experienced pathologist should be on hand to make frozen sections for immediate determination. A good surgeon with a poor pathologist should never attempt removal of questionable neoplasms from the human breast.

Perforated Gastric and Duodenal Ulcer

DR. A. C. STOKES, Omaha: The four most common symptoms indicating perforation of a gastric or duodenal ulcer in order of their percentage of value are: (1) sudden severe pain; (2) rigidity, boardlike and general; (3) abdominal tenderness, often localized, occasionally general, and (4) symptoms of collapse or shock. The symptoms of ulcer perforating in the anterior side of the lesser curvature of the stomach are likely to be more classical than those of perforating ulcer of the duodenum, and perforations in the posterior wall are least of all classic. These posterior perforations are often missed entirely until symptoms of a subphrenic abscess appears, or general infection in the lesser or greater peritoneal sac is well established. The treatment most in vogue is simple closure of the ulcer, with gastroenterostomy reserved for cases of pyloric stenosis, perigastric adhesions and large indurating ulcers. This should be attempted only at the time of the perforation, when the patient is in the best of condition, and within twelve hours after the perforation. Simple closure of a perforated gastric or duodenal ulcer cures the ulcer in about 80 per cent. of cases. The mortality following operation for perforated gastric ulcer increases in direct proportion to the number of hours following the perforation at which the operation is performed. All operations for perforated gastric or duodenal ulcer should be followed by proper medical treatment for considerable periods of time after the operation is performed.

Cholecystectomy Without Drainage

DR. W. A. COVENTRY, Duluth, Minn.: In virtually every case of cholecystectomy, one can with proper technic close the gallbladder incision without drainage. If this is done, the postoperative pain, especially passing up into the shoulder blade and scapula, the postoperative nausea and vomiting, postoperative temperature, postoperative tympany, and finally the end-result, will be very much more smooth, more pleasant to the patient and to the surgeon, and far more gratifying in all respects.

Appendicitis in Women

DR. A. W. ABBOTT, Minneapolis: An investigation was made to see how often pelvic peritonitis existed after appendicitis in women. In more than 1,000 cases that probably might meet these requirements, only forty-two were found that were absolutely representative. Ninety per cent. of these women had pelvic adhesions of varying extent. Comparatively little disease was found in the tubes and ovaries beyond adhesions. The analysis showed (1) that appendicitis is very commonly followed by pelvic pathology; (2) that appendicitis is a direct menace to the child-bearing capacity of women, and (3) this may explain some otherwise obscure cases of sterility. Admitting these conclusions, an early removal of appendicitis as the primary source of infection is urgently recommended.

Acute (Puerperal) Inversion of the Uterus

DR. EDWARD EVANS, La Crosse, Wis.: Inversion of the puerperal uterus is rare. Since the appearance of Jones' paper in 1913, I have been able to collect fifty-six cases. A relaxed uterus is the prime predisposing cause; improper delivery of the placenta is the most common active cause. In these fifty-six cases, however, the placenta was adherent in seventeen after the inversion occurred. Probably fundal attachment of the placenta is the greatest factor, and since fundal attachment is very rare, this would account for the rarity of inversion. Of the fifty-six cases, twenty-eight were reduced manually, five by Aveling's repositor, two spontaneously, four by laparotomy, five by vaginal hysterectomy, three by anterior colpohysterotomy, and three by posterior colpohysterotomy. In cases of complete inversion, it is probable that manual reposition can rarely succeed, and laparotomy should be the operation of choice. If the cervical ring can be felt in the vagina, then manual reduction should succeed very often, especially when the case is recognized early. Failing in this, anterior or posterior colpohysterotomy have about an equal number of advocates.

Preservation of the Facial Nerve During Complete Removal of Parotid Gland for Malignant Tumor

DRS. A. W. ADSON and W. O. OTT, Rochester, Minn.: Early diagnosis and early and complete enucleation are advised for encapsulated tumors of the parotid gland; but, if metastasis has occurred to the gland, radical removal should be carried out with preservation of the facial nerve. This radical procedure should be performed whenever there is doubt concerning metastasis from the encapsulated tumor into the parotid gland. As long as the tumor remains encap-

sulated, it is not highly malignant. In the operation for removing the parotid gland, the inframandibular branch of the seventh nerve is first exposed through an incision which extends from a point 3 cm. above and posterior to the lower tip of the mastoid, and curves downward 2 cm. below the border of the mandible to a point 4 cm. anterior to the angle of the jaw. The nerve branch is then traced backward until the temporal and cervical divisions of the seventh nerve are exposed. Then an additional incision is made down from the zygoma and just in front of the ear above the parotid, and this incision is connected with the one previously described. The section of the glands should be carried downward in the line of the incision from the zygoma, and should be deep enough to expose the mandible and the temporal border of the posterior masseter muscle. The dissection must be kept close to the cartilage of the ear and back of the parotid gland, care being taken not to injure the temporal branch of the facial nerve. By this method the two surgical fields can be connected. After this, the temporal and cervical divisions of the facial nerve are dissected away from the parotid. If this dissection is complete, the skin with the parotid may be elevated, leaving the peripheral branches of the facial muscles undisturbed. The incision is then carried forward sufficiently to elevate all of the parotid, dividing and ligating Stenson's duct. After this, the gland is removed from the skin. The next step is to lift the seventh nerve and dissect out the deep lobe of the parotid gland behind the mandible and mesial to the seventh nerve. The wound is closed with a subareolar stitch of catgut and with a dermal stitch of horsehair.

Significance of Right-Sided Abdominal Pain

DR. ROBERT C. COFFEY, Portland, Ore.: The chain of pathologic changes that can develop as a result of right-sided ptosis or nonfixation of the right colon may be stated as: (1) nonfixation of the cecum and ascending colon; (2) high fixation of the appendix and its mesentery well up under the liver; (3) Fixation of the hepatic flexure to the front surface of the kidney, with acquired membranous development to strengthen the support; (4) acquired membranes extending from the parietal peritoneum across to the mobile colon; (5) acquired membranes along the undersurface of the first part of the transverse mesocolon, for the extra support of this part of the colon; (6) one band extending along the omentum from the colon to the undersurface of the gallbladder; (7) another band extending from the colon across the duodenum, making extra fixation, and (8) a midline ptosis probably due to dilatation of the stomach secondary to dilatation of the duodenum, which was produced by duodenal-arterial mesenteric ileus. These conditions, when taken with the history, make a complete clinical and pathologic picture of right-sided ptosis, and offer a perfect explanation of the significance of marked right-sided abdominal pain that is not based on an organic lesion.

Radical Operations on the Stomach with Special Reference to Mobilization of the Lesser Curvature

DR. WILLIAM J. MAYO, Rochester, Minn.: The lesser curvature is the key of the anatomic lock which prevents mobilization of the stomach so necessary for operations of the partial gastrectomy type. If the gastric artery is tied early and the gastrohepatic omentum is separated from the liver, by traction on the distal stump of the gastric artery, the fat, the glands, and the unyielding structures of the lesser curvature of the stomach can be dissected out, the arteries being tied as they are encountered. This enables the lesser curvature to be elongated remarkably, and in the majority of cases in which the carcinomatous growth or ulcer is situated in the pyloric end or in the lesser curvature distal to the incisura, excision of the diseased portion of the stomach is possible, to be followed by direct union between the stomach and the duodenum. When the cut end of the stomach is more than twice the diameter of the cut end of the duodenum, it should be narrowed by proper suturing of the lesser curvature. The gastroduodenal union is accomplished by taking two stitches on the gastric side to one on the duodenal side, which produces a remarkably smooth anastomosis. Following the gastroduodenal union, the stomach is caught by two catgut sutures placed in the anterior wall sufficiently proximal to the anastomosis, so that when it is attached to the suspensory ligament of the liver it will carry the gastroduodenal anastomosis to the right of the spine, taking the tension from the suture line and improving gastric drainage.

Value of Pyelography in Abdominal Diagnosis

DR. DANIEL N. EISENDRATH, Chicago: Thorough examination of the upper urinary tract in the differential diagnosis of cases presenting symptoms of a subacute or chronic character is very necessary. Pyelography and ureterography are of greater value than the employment of the shadowgraph catheter alone. In cases in which pain is the principal symptom, a pyelogram or ureterogram will at times reveal the presence of changes in the pelvic outline as the result of pyelitis or ureteritis, or of a hydronephrosis or hydro-ureter due to obstruction, such as kinking from an abnormally movable kidney, calculus, stricture or an abnormal vessel to the lower pole. The differentiation of shadows due to gallstones from those due to renal calculi has been greatly aided by pyelography. The presence of a normal pyelogram in cases of abdominal enlargements makes it possible to exclude the kidney as the seat of the tumor. Changes in the outline of the pyelogram enable the surgeon to recognize kidney tumors at a comparatively early period, and the displacement of the ureters in retroperitoneal tumors is shown. Pyelography is of value in the recognition of renal anomalies which may be the seat of pathologic changes and giving rise to symptoms in locations in which the kidney was not normally found.

Peritoneal Drainage

DR. CUTHBERT POWELL, Denver: Drainage, so-called, of the peritoneal cavity does not remove infection, nor does it allow the escape of more than a negligible amount of fluid present in the general peritoneal cavity. On the other hand, the presence and pressure of drains undoubtedly militate against the recovery of the patient. Except in definitely localized and walled off abscesses, and possibly in those now fortunately rare late cases of general suppurative peritonitis, when the whole cavity is filled with pus under pressure, drainage is contraindicated. The surgeon's duty has been performed when the focus of infection has been removed and the abdomen closed in as short a time as is possible, consistent with a proper technic and with a minimum of trauma and exposure of the peritoneum. The use of gauze packs, towels and the like, and rough and unnecessary handling of the viscera all do an amount of harm which no form of drain will overcome. I wish to plead most strongly for a reversal of Tait's old dictum and advise that, when in doubt, one should not drain the peritoneal cavity.

The Value of the Roentgen-Ray Examination in the Early Diagnosis of Postoperative Ileus

DR. JAMES T. CASE, Battle Creek, Mich.: In the treatment of postoperative ileus, the greatest single factor in saving life is the earliest possible diagnosis of the fact of obstruction. In 1910 I began the use of the roentgen ray in cases of suspected ileus, especially when surgical intervention was not clearly indicated. No dressings are removed. No opaque medium need be administered. The whole procedure requires not more than five minutes. The film is at once developed, and it may be studied immediately after being dipped in the fixing solution. It will reveal at once whether there is any gas distention within the abdomen, and if so, whether the distention occurs within the stomach or within the large or small intestine. If doubt still exists as to the fact of the obstruction, a small amount of barium sulphate, say one-half ounce, may be administered by mouth in a little water, and another film made five or six hours later.

Sliding Hernias of the Cecum and Appendix in Children

DR. VERNON C. DAVID, Chicago: In three cases of sliding hernia of the cecum in children coming under my observation, there were no adhesions between the bowel and the testicle, and no gross evidence of a plica vascularis was present. The cecum and appendix were incorporated in the sac of the hernias; in fact, they were part and parcel of the sac.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Medical Sciences, Philadelphia

December, 1922, **164**, No. 609

*Infectious Mononucleosis (Glandular Fever); Report of Ten Cases. W. T. Longcope, Baltimore.—p. 781.
*Relations of Hypertension to Cardiorenal Diseases. N. B. Foster, New York.—p. 808.
*Vital Capacity in Health and Heart Disease. J. H. Pratt, Boston.—p. 819.
*Treatment of Lobar Pneumonia by Serum Free Solution of Pneumococcus Antibodies. L. A. Conner, New York.—p. 832.
*Pregnancy Complicating Heart Disease. H. E. B. Pardee, New York.—p. 847.
Mechanism of Elimination of Bacteria from Respiratory Tract. A. L. Bloomfield, Baltimore.—p. 854.
*Two Hundred Syphilitic Patients Whose Chief Complaint was "Stomach Trouble"; Interpretative Analysis of Diagnosis of Syphilis in Consultant Medical Practice. J. H. Stokes and P. W. Brown, Rochester, Minn.—p. 867.
Safeguarding of Tonsil and Adenoid Operation. G. Fetterolf, Philadelphia.—p. 884.
Clinical Observations and Research Work. J. B. Deaver and S. P. Reimann, Philadelphia.—p. 901.

Infectious Mononucleosis.—Ten cases of infectious mononucleosis are described by Longcope. The relation of this disease to glandular fever is discussed. The uniform character of this febrile disease and the association of an enlargement of the lymph nodes with a striking increase of mononuclear cells of abnormal type in the blood serve to differentiate the condition from other acute infectious diseases. If the disease is an entity, as it appears to be, the specific cause is unknown. It resembles most closely acute leukemia but may be differentiated by many characteristics. The disease is of short duration and recovery is the rule.

Relation of Hypertension to Cardiorenal Disease.—Foster asserts that adequate evidence for the belief that hypertension is a predominant factor in the causation of arteriosclerosis cannot be found. Even though some types of nephritis may possibly be of vascular origin, their genesis cannot be traced through arteriosclerosis to hypertension. But while there is no direct interdependence of these organic changes, there are many facts suggestive of the same causative agent producing both organic changes. Present knowledge seems to indicate in a most general way that organic change in the kidneys and vessels may arise in diverse ways, the least indefinite of these being through intoxications of infectious origin. There are suggestions that intoxications resulting from abnormal metabolism may have a similar effect. These intoxications produce early only functional disorders chiefly referable to the nervous system. When persistent, they induce organic changes affecting the blood vessels and kidneys.

Vital Capacity in Health and Heart Disease.—The effect of age on vital capacity was studied by Pratt in 100 men who showed no evidence of disease of the heart or other organs at the time of their examination. Pratt compared his findings in these cases with those of 100 persons, both men and women who had organic heart disease. The mean vital capacity of the 100 persons with normal hearts was between 3,500 and 4,000 c.c., while the mean for those with abnormal hearts was between 1,500 and 2,000 c.c. No one with a healthy heart had a vital capacity below 1,500 c.c., while 18 per cent. of those with heart disease had a vital capacity above 4,500 c.c., and only five of the 100 had a vital capacity above 4,000 c.c.; 11 per cent. of those with healthy hearts had a vital capacity above 4,500 c.c. Seventy-seven of the 100 persons with abnormal hearts had cardiac insufficiency of the congestive type. Dyspnea on exertion or edema was present. Sixteen presented no evidence of cardiac weakness. Pratt has for five years followed the variations in the vital capacity of all cases of heart disease that have been under his care. When cardiac insufficiency of the congestive type has existed, the vital capacity has followed closely the change in the clinical condition. It has proved to be a good index of the amount of reserve power possessed by the heart.

Treatment of Pneumonia by Serum Free Solution of Pneumococcus Antibodies.—The effect of treatment by the intravenous injection of a serum free solution of antibodies of the three fixed types of pneumococci was studied by Conner in a series of 116 cases of lobar pneumonia in adults, without any attempt at selection. The death rate was 14.6 per cent. In thirteen cases the exciting organism was a streptococcus or the Friedländer bacillus. The mortality rate for these patients was 46.1 per cent. Of the remaining 103 cases, ninety were proved to be due to the pneumococcus and the others, because of the low death rate among them, were regarded as probable pneumococcus cases. For these 103 patients the death rate was 10.6 per cent. Among the ninety proved pneumococcus cases, Type IV pneumonias were conspicuous both by their high incidence (54.4 per cent.) and by their very low mortality (4.1 per cent.). The figures suggest that the treatment had some real curative value, with respect to Type I and Type II cases at least, and this impression is supported by the fact that in a considerable proportion in which treatment could be instituted early, the progress of the disease was stopped short, and by the further fact that recoveries among the cases associated with positive blood cultures were more frequent than is usual under ordinary methods of treatment. The nature of the therapeutic effects of the solution is obscure in view of the apparent effectiveness of the treatment in Type IV cases. The difficulties in the way of explaining the beneficial results of the treatment on the score of some purely nonspecific action are discussed. The method is free from the disadvantages incident to the injection of large amounts of serum. It has, however, one serious defect in that the immediate reactions following the injections are often severe and occasionally are dangerous. In one patient death seemed to be directly traceable to the severity of this reaction. The method is believed to represent a step forward in the direction of a satisfactory form of rational treatment but further clinical study is needed and some means of controlling the severity of the immediate reactions to the injections must be found before it can safely be introduced into general use.

Pregnancy Complicating Heart Disease.—It is not Pardee's feeling that abortion is often indicated for women with heart disease. Most of them will go through very well indeed, but it is the physician's urgent duty to find some means of picking out those cases that will not go through without developing serious symptoms. Cardiac failure is the thing feared in all cases, and prognosis and treatment should be guided by the presence or absence of symptoms or signs of cardiac failure and by the degree of severity of these when present. The pathologic condition is of much less importance than the physiologic reactions. With proper observation and treatment severe cardiac failure should not occur during pregnancy, for if medical treatment does not ward it off, then intervention is indicated. Even during labor its occurrence should be rare with careful observation and a promptly performed forceps or cesarean section if severe failure seems imminent. Operation should not be withheld at any stage, even though the signs of failure are slight, if they are seen to be growing progressively worse under proper medical treatment. It is better to operate when the failure is moderate than to have to do so when it is severe.

Stomach Trouble and Syphilis.—Of 200 syphilitic patients who complained of stomach trouble, 70 per cent. had neurosyphilis. Twenty patients (10 per cent.) had organic lesions (syphilitic or nonsyphilitic) of the gastro-intestinal tract, nine (5 per cent.) had lesions of the heart, and in only 4 per cent. was it a true syphilis of the stomach. Stokes and Brown suggest that the seat of the lesion in patients with gastric crises and negative spinal fluid examinations is in the vagus, the abdominal ganglia and the sympathetic system. Fifty per cent. of 122 patients had hypo-acidity and 38 per cent. were normal. Hyperacidity was rare. Of 132 patients having roentgen-ray examinations, the findings in 84 per cent. were negative and in only 6 per cent. were there definite or doubtful syphilitic lesions. Treatment for syphilis underlying a gastric complaint must be directed according to the special indications in the case, and must not be merely general. Different methods will be required for underlying syphilis of

the nervous system, the stomach, or the heart, for example. The authors observed striking symptomatic improvement in certain cases of gastric and duodenal ulcer in neurosyphilitic patients in whom the roentgen ray after treatment showed the lesion itself to be still present. The spinal fluid examination stands out from this investigation as a procedure of the highest importance, outranking the serum Wassermann reaction in diagnostic syphilology as applied to internal medicine.

American Journal of Obstetrics and Gynecology, St. Louis

November, 1922, **4**, No. 5

*Life History of Ovarian Hematomas (Hemorrhagic Cysts) of Endometrial (Müllerian) Type. J. A. Sampson, Albany, N. Y.—p. 451.
Some Phases of Bovine Genital Infections of Possible Interest to Medical Profession. W. L. Williams, Ithaca, N. Y.—p. 513.
*Treatment of Puerperal Sepsis by Use of Mercurochrome Intravenously: Report of Animal Experimentation in Chemical Disinfection of Blood. E. B. Piper, Philadelphia.—p. 532.
*Use of Sutures as Tractors in Vaginal Operation for Prolapsus. T. S. Cullen, Baltimore.—p. 544.
*Precancerous Conditions of Cervix Uteri. R. R. Huggins, Pittsburgh.—p. 552.

Life History of Ovarian Hematomas of Endometrial Type.—Next to leiomyoma of the uterus, the pathologic conditions arising from the implantation of epithelium which escapes from the fallopian tubes into the peritoneal cavity Sampson believes probably furnish the most frequent pelvic lesions found at operation in women between the ages of 30 and the menopause. He has encountered thirty-seven cases with these lesions in 170 abdominal operations for pelvic disease in women between 30 and 50 (20 per cent. plus); and six additional cases, three in women under 30 and three in women over 50. One of the latter had not reached the menopause. The epithelium primarily giving rise to these implantations is derived from or through the fimbriated ends of the fallopian tubes. It lodges either on the surface of the ovaries or on the peritoneal surface of the other pelvic structures, especially those in the culdesac, or on both the ovaries and the pelvic peritoneum, and develops into glands or tubules (adenomas) of endometrial (mullerian) type. Sampson discusses this subject in great detail and many excellent illustrations are appended. Sampson believes further that the implantation adenomas in the ovary derived from tubal and uterine epithelium are the source of many ovarian cysts and carcinomas.

Mercurochrome Treatment of Puerperal Sepsis.—A solution of mercurochrome given intravenously in the proper dosage, Piper says, appears, in some cases, to be of great value in the treatment of puerperal sepsis and to have no deleterious effects. All cases of puerperal septicemia are so serious and so frequently fatal that heroic measures are justified. The dosage of the drug is an important factor. Piper gave about 25 c.c. of a 1 per cent. solution of mercurochrome in distilled water per hundred pounds of body weight. The reaction that occurs is almost routinely the same. Within the first hour there may be vomiting; in less than two hours a definite diarrhea will commence. In the first six hours there will probably be a marked chill with a rise in temperature up to 105 F. Following this chill there will be a gradual decrease in temperature with a proportionate pulse rate decrease until the temperature reaches subnormal, gradually rising to normal or slightly above where it should stay from twenty-four to forty-eight hours. The diarrhea will continue over a day or so and may require treatment.

Vaginal Operation for Prolapse.—Cullen describes a method which includes amputation of the cervix and raising up the bladder so that it will rest on the fundus of the uterus.

Precancerous Condition of Cervix of Uterus.—Huggins insists that every woman who has borne children and who has reached the age of 40 should be examined and if disease of the cervix is found it should be treated. This treatment may be palliative but often it should consist in the removal of the diseased tissue. While a cervix may present but slight evidence of disease, this may be sufficient in the presence of susceptibility and an acid medium to cause cancer. It is important that every practitioner acquaint himself with what a normal cervix is, so that he may appreciate the deviations from the normal and cure the cancer before it starts.

Archives of Dermatology and Syphilology, Chicago

December, 1922, **6**, No. 6

Prevalence of Yaws (Frambesia Tropica) in United States. H. Fox, New York.—p. 657.
*Erosio Interdigitalis Blastomycetica. J. H. Mitchell, Chicago.—p. 675.
*Malignant Endotheliomas with Cutaneous Involvement. G. J. Busman, Rochester, Minn.—p. 680.
Melanoblastoma of Nail Bed (Melanotic Whitlow). A. E. Hertzler, Halstead, Kan.—p. 701.
*Kolmer Modification of Wassermann Reaction. R. A. Kilduffe, Pittsburgh.—p. 709.
Specificity of Cholesterinized Antigens in Serologic Diagnosis of Syphilis. R. A. Kilduffe, Pittsburgh.—p. 730.
*Experience with Kolmer Quantitative Complement Fixation Test for Syphilis. L. J. Palmer and W. E. Gibb, Seattle.—p. 739.
Studies in Chemotherapy of Fungus Infections. I. Fungistatic and Fungicidal Activity of Various Dyes and Medicaments. J. F. Schamberg and J. A. Kolmer, Philadelphia.—p. 746.
Inoculation, Autoinoculation and Complement Fixation Tests in Pompholyx (Tilbury Fox). S. S. Greenbaum, Philadelphia.—p. 757.
Treatment of Phytosis of Feet. M. B. Hutchins, Atlanta, Ga.—p. 761.
Comparative Study of Kahn and Wassermann Reactions for Syphilis. S. Ide and G. J. Smith, Ann Arbor, Mich.—p. 770.

Saccharomycetic Interdigital Erosion.—In Mitchell's opinion the term erosio interdigitalis blastomycetica is confusing as it leads to the supposition that the causative organism is the well known blastomyces, with which it has nothing to do. He holds that substitution of "saccharomycetica" for "blastomycetica" would be advisable. The chronicity of the disorder, the fixed location of the lesion, the absence of vesication, the resistance to therapy and the occurrence of the disorder on the hands of washerwomen, make the dermatosis worthy of consideration as an entity. Whether or not the yeast is the causative organism, Mitchell does not say, as he has not carried out inoculative experiments, for the reasons given in the foregoing.

Malignant Endotheliomas.—Three cases are reported by Busman of tumors whose cellular elements present the histologic characteristics of endothelial cells. The clinical course of the lesions, in general, is that of tumors of slow growth, often developing at sites of trauma. Metastasis does not appear until late, when the tumor has reached considerable size. The tumors in all cases exhibit a marked hemorrhagic tendency. Clinically, the lesions must be distinguished from syphilis, carcinoma, sarcoma, sporotrichosis and the infectious granulomas. The histologic structure of the tumors is that of an undifferentiated polymorphic cell type of growth presenting a whorl arrangement of the cells with the formation of elongated strands and narrow trabeculae. There is definite evidence of an attempt to differentiate into vascular structures. A constant feature is the occurrence of vacuoles in the cytoplasm of practically all cells. Treatment consists of radical surgical removal of the original process followed by use of the roentgen ray or radium application to the site of the original lesion and to all probable areas of metastasis.

Kolmer Modification of Wassermann Test.—The results of tests on 1,014 serums examined in parallel series by a routine method of complement fixation and by the Kolmer modification of the Wassermann reaction are recorded by Kilduffe and the findings tabulated and discussed. The Kolmer method is favored because the results with this method are in close agreement with the clinical findings in a high percentage of cases. It is a strictly quantitative method and as such better adapted to the study of treated syphilis. It appears to be eminently worthy to supercede and supplant the methods now in common use. It presents by far the most acceptable technic yet proposed for adoption as a standard method and as such should be subjected to extensive, exhaustive and impartial trial and study. In early primary syphilis the Kolmer modification gives earlier and stronger results than routine methods.

Id.—Palmer and Gibb also favored the Kolmer quantitative complement fixation test for syphilis.

Archives of Neurology and Psychiatry, Chicago

December, 1922, **8**, No. 6

Recent Studies on Spirochetes in General Paralysis. C. B. Dunlap, Ward's Island, N. Y.—p. 589.
*Anatomic Study of Faisceau De Turck in Relation to Temporal Lobe. J. H. W. Rhein, Philadelphia.—p. 608.
Tuberous Sclerosis. Report of Case. W. Freeman, Philadelphia.—p. 614.

*Disturbances of Respiratory Rhythm in Children. Sequel to Epidemic Encephalitis. H. L. Parker, Rochester, Minn.—p. 630.
Psychopathology and Organic Disease. S. E. Jelliffe, New York.—p. 639.
Postencephalitic Deformities of Motion. S. P. Goodhart, New York.—p. 652.
Pyramidal and Extrapyramidal System Involvement in Epidemic Encephalitis. S. Brock and I. Margaretten, New York.—p. 660.
*Striocerebellar Tremor. Study of Nature and Localization of Combined Form of Organic Tremor. J. R. Hunt, New York.—p. 664.

Study of Faisceau de Turck.—A tumor measuring 5 cm. anteroposteriorly and 4 cm. transversely was found by Rhein occupying the posterior two thirds of the first and second temporal convolutions. Microscopic examination disclosed that the cortex and white matter of the superior and middle temporal gyri were totally destroyed by the tumor, and the brain tissue anterior and posterior to these regions to the extent of about 2.5 cm. was implicated by a cellular infiltration consisting of cells similar to those found in the tumor proper. A study of the serial sections of the brain internal to the tumor and the corresponding levels on the opposite side failed to reveal any evidence of degeneration on either side. The faisceau de Turck, at the point where it appears in th retrolenticular region, was intact. The foot of the peduncle stained uniformly and showed an undegenerated faisceau de Turck in this region. Rhein is convinced that if the temporal lobe is the origin of fibers which degenerate in a descending direction, consisting of the faisceau de Turck, they may come from the posterior third of the third temporal convolution.

Disturbance of Respiratory Rhythm Following Epidemic Encephalitis.—The histories of eight patients, seven of whom were children, suffering from a disturbance of the respiratory rhythm are cited by Parker. While four of the patients had had an infectious illness worthy of the diagnosis of epidemic encephalitis, the remaining patients dated their illnesses from an infectious episode or febrile illness. In seven patients the onset occurred during the first three months of 1920. The main features of the clinical picture in these cases were paroxysmal stretching, breath holding, grunting and forced noisy respirations. In others there was constant dyspnea, associated, in one case, with posture. The average duration of the illness was seventeen months before examination at the clinic, and in a few cases there was an appreciable gap between the initial illness and the appearance of the prominent symptoms. The persistency of the symptoms contrasted with the peculiar nature of the disease which was more manifest by night than by day. It was relatively unaffected by various forms of therapy. Combined with the peculiar paroxysmal respiratory attacks were changes in character. The patients were noisy, disobedient, and passionate, whereas formerly they had been well behaved. There was marked insomnia with inversion of the sleep rhythm in the seven children and abnormal drowsiness in the one adult.

Nature of Striocerebellar Tremor.—Hunt postulates the existence of a combined form of organic tremor caused by the involvement of separate neural mechanisms. There are recognized combined forms of palsy, central and peripheral, pallidal and pyramidal, as well as combined forms of sensory disturbances due to simultaneous involvement of more than one system. In this category Hunt would place the striocerebellar tremor.

Arkansas Medical Society Journal, Little Rock

December, 1922, **19**, No. 7

Significance of Blood Pressure Readings. A. W. Strauss, Little Rock.—p. 121.
Early Recognition of Carcinoma of Cervix. D. Gann, Jr., Little Rock.—p. 127.
Roentgen-Ray Treatment of Diseased Tonsil and Adenoids. J. D. Southard, Fort Smith.—p. 130.

Boston Medical and Surgical Journal

Dec. 14, 1922, **187**, No. 24

Mental Hygiene Campaign as Seen by an Outside Observer. B. Crothers, Boston.—p. 861.
Illustrations of Differential Diagnosis of Some Torpid States: Therapeutic Import. T. A. Williams, Washington, D. C.—p. 867.
Congenital Malformation of Intestine—Atresia and Imperforate Anus. Report of Twenty-Seven Cases. W. S. Quinland, Boston.—p. 870.
*Treatment of Diabetic Gangrene. H. F. Root, Boston.—p. 875.
*Hydatid Cyst of Lung. Report of Two Cases. G. M. Balboni, Boston.—p. 879.
Studies in Pancreatic Function. Enzyme Concentration of Duodenal Contents After Ingestion of Pure Foodstuffs and Food Mixtures by Normal Men. C. W. McClure and A. S. Wetmore, Boston.—p. 882.

Treatment of Diabetic Gangrene.—Seven cases of diabetic gangrene with successful operative treatment are reported by Root.

Hydatid Cyst of Lung.—Since 1917 two cases of hydatid cysts of the lung have been observed in the outpatient department of the Massachusetts General Hospital; one a unilateral cyst of the right lung, the other one of multiple cysts of both lungs. These two patients came principally for cough and bloody sputum. One of these cases is of considerable interest on account of the presence of multiple echinococcus cysts in both lungs with a probable cyst of the kidney.

Dec. 21, 1922, **187**, No. 25

*Studies in Pancreatic Function. Enzyme Concentration of Duodenal Contents in Pathologic Conditions Involving Pancreas, Liver and Stomach. C. W. McClure and C. M. Jones, Boston.—p. 909.
Congenital Obliteration of Bile Ducts and Congenital Biliary Cirrhosis of Liver. J. K. Gordon, Boston.—p. 923.
Problem of Tuberculous Suspect. J. B. Hawes, Boston.—p. 928.
Education of Trained Nurse. C. Frothingham, Boston.—p. 930.

Studies in Pancreatic Function.—Abnormalities in enzymatic activities of duodenal contents, demonstrated by the methods and procedures used in the work here reported, were found by McClure and Jones: (*a*) in the presence of some organic lesion involving the pancreas primarily or secondarily; or (*b*) when clinical, operative or necropsy findings indicated the possibility of derangement of the external secretory function of the pancreas. It seems fair to the authors to assume, therefore, that such abnormalities show pathologic involvement of the pancreas or its ducts, and that the involvement of the pancreas may be mechanical or functional in nature. If this assumption is correct, then it is justifiable to conclude that estimation of enzymatic activities of duodenal contents furnishes an index to the activity of the external secretory function of the pancreas. In achylia gastrica and pernicious anemia no abnormalities in the activity of the external secretory function of the pancreas were demonstrable, as measured by the enzyme concentration of duodenal contents. These findings suggest that the presence of hydrochloric acid is not necessary in order to stimulate normal pancreatic secretory activity. Under the experimental conditions used, enzymatic activity was not demonstrably affected by the presence or apparent absence of bile in the duodenal contents. The external secretory function of the pancreas, as measured by the enzyme concentration of duodenal contents, was found to be much depressed in chronic pancreatitis. Acute pancreatic necrosis, cancer of the head of the pancreas and lesions obstructing the pancreatic duct were accompanied by marked abnormalities in enzymatic activities of duodenal contents. Obstructive lesions caused great diminution, while acute necrosis usually caused dissociation in enzymatic activities. Estimation of enzymatic activities of duodenal contents furnished findings of value in the differential diagnosis between benign and malignant lesions, causing obstructive jaundice. Dissociation of enzymatic activities of duodenal contents are interpreted as showing derangement of the external secretory function of the pancreas. Acute and chronic cholecystitis and infectious (catarrhal) jaundice were accompanied by dissociation of enzymatic activities of duodenal contents. This finding suggests that there was associated derangement of the external secretory function of the pancreas.

Canadian Medical Association Journal, Toronto

November, 1922, **12**, No. 11

Chronic Brain Injuries: Pathology and Treatment. W. Sharpe, New York.—p. 761.
*Surgical Therapy and Net Results in Gallbladder Disease. R. R. Graham, Toronto.—p. 767.
*Cancer of Uterine Cervix: Summary of Results Obtained by Various Methods of Treatment. J. W. Ross, Rochester, Minn.—p. 772.
Asthma in Children. A. Brown, Toronto.—p. 780.
Merits of Intraperitoneal Injections in Infants. T. D. McGregor, St. John, N. B.—p. 787.
*Septic Absorption in Diffuse Septic Peritonitis. W. A. Costain, Toronto.—p. 789.

Postoperative Management. R. V. B. Shier, Toronto.—p. 793.
Local Anesthesia as Applied to Operations on Rectum and Anus. A. J. Grant, London.—p. 795.
Plastic Surgery of the Head and Neck. F. Risdon, Toronto.—p. 797.
Heliotherapy in Surgical Tuberculosis. R. I. Harris, Toronto.—p. 799.
Public Health Organizations. J. Roberts, Hamilton.—p. 805.
Osteo-Arthritis. W. A. Gardner, Winnipeg.—p. 808.
Lactic Acid Milk Feeding in Marasmus. R. R. Struthers, Montreal.—p. 812.

Results of Gallbladder Surgery.—In a series of ninety-one cases analyzed by Graham, there were seven deaths. In the chronic cholecystitis group without stone formation, there were fifty-two cases and one death; that one death occurring a year later as the result of a recurrence of a duodenal ulceration, for which a gastro-enterostomy had to be performed. The other six deaths occurred, with one exception, when the disease had progressed to the formation of stone, and in that instance there was an associated intestinal obstruction in a patient five months' pregnant, who miscarried seventy-two hours after operation. In view of the inefficiency of other forms of therapy in controlling sequels and relieving symptoms of gallbladder disease, Graham urges that surgical therapy should be instituted, preferably in the early stage of the disease prior to the onset of complications, at which time the mortality is practically negligible; and further that such surgical therapy, judiciously applied, will cure 66 per cent. and improve 34 per cent. of patients who survive the procedure.

Results of Treatment of Cancer of Uterine Cervix.—From Ross' study of 475 cases in which various forms of therapy were employed, it would seem that in very early cases of cancer of the uterine cervix treatment by surgery alone gives good results. Surgery in combination with radium gives slightly better results than surgery alone. In operable but not early cases treatment by surgery alone or combined with radium gives the best results. Radium alone or Percy cautery alone are of equal value and both less efficient. If radium is not available, Percy cautery should be used. In cases considered inoperable because of extension to the vagina surgery gives the best results and radium is disappointing. In inoperable cases radium, alone or in combination with cautery or surgery, is the only effective agent. In advanced cases radium is superior to all other methods but not curative. The incidence of fistula is higher with the Percy cautery than with any other method.

Septic Absorption in Diffuse Septic Peritonitis.—Judged from Costain's experimental observations, it would seem that the first procedure, after a diagnosis of diffuse septic peritonitis has been made, would be to establish a thoracic duct fistula, and at a later date such other operative measures as the situation warranted. The operation could be done with greater facility in the human than in the dog, as the duct is more accessible and, being larger, could be drained more successfully. The emaciation could be combated by blood infusions or transfusions. By checking the septic absorption, those distressing complications which are met so frequently in peritonitis would be largely overcome. The conclusion to be drawn from this experimentation is that in diffuse septic peritonitis death travels through the thoracic duct.

Delaware State Medical Journal, Wilmington

July, August, September, 1922, **13**, No. 3

Doctors and Welfare Agencies. A. Robin.—p. 21.
Labyrinthine Irritability Associated with Focal Infections. W. F. Bonner, Wilmington.—p. 28.

Indiana State Medical Association Journal, Ft. Wayne

December, 1922, **15**, No. 12

Trend of Neurologic Surgery. C. H. Frazier, Philadelphia.—p. 405.
Endocrinology in Its Medical Aspects. G. W. McCaskey, Fort Wayne.—p. 409.
Neurologic Phase of Endocrinology. C. C. Bitler, Newcastle.—p. 414.
Surgical Aspects of Endocrinology. W. D. Gatch, Indianapolis.—p. 423.
Epidemic Jaundice. S. C. Waters, Middletown.—p. 430.

Journal of Industrial Hygiene, Boston

December, 1922, **4**, No. 8

Recent Investigation on Atmospheric Conditions in Industry. H. M. Vernon, London.—p. 315.
Preparation of Hatters' Fur: Chemical Study of Carrotting Process. J. R. Johnson.—p. 325.
Miners' Nystagmus from Point of View of Workmen's Compensation Act. T. L. Llewellyn, London.—p. 335.
Effects of Exposure to Arsenic Trichlorid on Health. S. Delepine.—p. 346.

Journal of Nervous and Mental Disease, New York

December, 1922, **56**, No. 6

Case of Pons Hemorrhage (Type Foville). G. B. Hassin, H. Isaacs and M. Cottle, Chicago.—p. 553.
*Thrombotic Cortical Amaurosis. H. Mella, Boston.—p. 563.
*Mental Symptom Complex Following Cranial Trauma. E. E. Hadley, Washington, D. C.—p. 567.
Psychosis with Encephalitis and Cerebrospinal Fluid Findings. B. Lemchen, Chicago.—p. 591.

Thrombotic Cortical Amaurosis.—Mella relates a case of sudden loss of vision which was diagnosed "toxic amblyopia" but on necropsy proved to be due to a bilateral lesion in the occipital lobe. The case appears to controvert, in part at least, the precept of John Hunter on the distribution of arteries. He held that they were distributed without relation to function. Wherever sections were made in the occipital lobes the blood vessels stood out prominently and were characteristic of an advanced arteriosclerosis. The thickening of media and the narrowing of the arterial lumen were so great that only a scant flow of blood could reach the parts supplied, resulting in degeneration of the calcarine area. The symmetrical position of the lesions makes the cause of blindness obvious. No lesions were encountered on examination of the optic tracts anterior to the occipital lobes. Beyond the general arteriosclerosis, the brain, cerebellum, pons and medulla appeared normal. This pathological picture proves the earlier diagnosis of toxic amblyopia to have been erroneous; furthermore it presents a condition which Mella says should be considered in all cases of amblyopia before making such vague diagnoses as "retrobulbar neuritis" and "toxic amblyopia" in the absence of fundus pathology. The case tends to corroborate the views of Shellshear, who believes that the arteries of the forebrain have a functional distribution and should not only be studied from the anatomic point of view, but in relation to their functional significance which is probably of paramount importance.

Traumatic Psychosis or Neurosis Not a Clinical Entity.—It is Hadley's belief that there is no clinical entity which may properly be called a traumatic psychosis or neurosis. However, there has been found, following severe injury to the brain, an alteration in the personality, which may be described as the "posttraumatic constitution."

Journal of Metabolic Research, Morristown, N. J.

July, 1922, **2**, No. 1

*Influence of Glands with Internal Secretions on Respiratory Exchange. VI. Effect of Suprarenal Insufficiency (by Removal) in Rabbits. D. Marine and E. J. Baumann, New York.—p. 1.
*Pancreatic Diabetes in Dog. VI. Influence of Pancreatic Extracts without Aid of Alkali on Metabolism of Depancreatized Animal. J. R. Murlin, B. Kramer and J. E. Sweet, New York.—p. 19.
Modified Haldane Open Circuit Apparatus for Measuring Respiratory Exchange in New Born Babies and Also in Rabbits and Cats. D. Marine, New York.—p. 29.
*High Fat Diets in Diabetes. F. S. Leclerco, Morristown, N. J.—p. 39.
Metabolism in Chloroform Poisoning. F. P. Underhill and R. Kapsinow, New Haven, Conn.—p. 57.
*Influence of Benzyl Benzoate on Nitrogenous Metabolism. G. T. Pack and F. P. Underhill, New Haven, Conn.—p. 73.
Influence on Metabolism of Some Purin and Pyrimidin Bases. F. P. Underhill and H. F. Farrell, New Haven, Conn.—p. 107.
Vitamin of Cod Liver Oils. I. Potency of Crude Cod Liver Oil, Pressed Cod Liver Oil and Cod Liver Stearin. A. D. Holmes, Boston.—p. 113.

Influence of Endocrins on Respiratory Exchange.—A prolonged absolute rise in heat production has been obtained by Marine and Baumann in 82 per cent. of thirty-three rabbits from which both suprarenal glands were completely removed, and in 40 per cent. of fifteen rabbits whose suprarenal function was crippled by freezing. The period of increased heat production may last from a few days to several months—the longest period in which increased thermogenesis has been followed in an individual rabbit was twenty-three weeks. It is concluded that the increased thermogenesis is, in part, dependent on the increased rate of discharge of the iodin

containing hormone from the thyroid. The ability of the thyroid to store iodin or to produce this hormone is not impaired after suprarenal injury. Infection, trauma, nerve injury, muscular movement and diet are not regarded as being essential factors in the increased thermogenesis following suprarenal injury.

Influence of Pancreas Extracts on Depancreatized Animal.—Additional proof is presented by Murlin et al. of the presence, in pancreatic tissue, of a substance capable of restoring to the diabetic animal the ability to utilize glucose. Although these experiments were made during 1913 to 1916, they are presented to confirm the previously recorded observations of Banting and Best. The nature of the active principle is yet to be determined.

High Fat Diet in Diabetes.—Observations on three patients are reported by Leclerco showing the effect of increasing the diet with fat beyond the caloric tolerance. Injury of the assimilation is manifested by a rise of blood sugar, which is generally slow but in the severest cases may be rapid. These cases illustrate the well known fact that in fasting or undernutrition, even emaciated patients derive their energy chiefly from body fat. None of the facts, therefore, warrant an assumption that high fat diets will suppress hyperglycemia or glycosuria by means of a marked reduction of protein catabolism. The statement that severe cases of diabetes which are resistant to undernutrition or fasting can be cleared up by high fat diets, in the author's opinion is contrary to fact. The attempt to prevent undernutrition by giving fat or any other kind of food prevents also the benefits of undernutrition.

Influence of Benzyl Benzoate on Nitrogenous Metabolism.—Judging from experimental investigations in dogs, made by Pack and Underhill, the therapeutic dose of benzyl benzoate for human beings is probably insufficient to disturb the normal nitrogenous metabolism.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

December, 1922, **20**, No. 5

Effect of Epinephrin on Excised Strips of Frogs' Digestive Tracts. C. M. Gruber, St. Louis.—p. 321.
Action of Morphin on Vomiting Center in Dog. C. D. Leake, Madison, Wis.—p. 359.
Naturally Nephropathic Animals. Ability of Alkaline Solution to Influence Amount of Stainable Lipoid Material that Appears in Kidney Following Use of General Anesthetic. W. deB. MacNider, Chapel Hills, N. C.—p. 365.
Picrotoxin Hyperglycemia. A. L. Tatum, Chicago.—p. 385.
*Action of Quinin on Sugar Mobilization with Its Bearing on Question of Glycogenolysis. A. L. Tatum and R. A. Cutting, Chicago.—p. 393.

Action of Quinin on Sugar Mobilization.—Tatum and Cutting assert that quinin properly administered is a glycogenolytic agent. Quinin hyperglycemia is the result of a central nervous system disturbance which leads by way of the splanchnic nerves and the normally innervated adrenal glands to lysis of glycogen. In the absence of adrenal innervation quinin produces in most instances hypoglycemia, most likely by virtue of a peripheral depression of glycogenolysis. Quinin produced, in most instances examined, a rise in alkaline reserve capacity of whole blood along with hyperglycemia in normals and hypoglycemia in animals with denervated suprarenals. Neither quinin nor epinephrin hyperglycemia can, on the basis of available evidences, be considered to be dependent on acidosis.

Kansas Medical Society Journal, Topeka

December, 1922, **22**, No. 12

Bronchoscopy. E. M. Seydell, Wichita.—p. 347.
Anxiety and Fear, Normal and Abnormal. L. C. Bishop, Wichita.—p. 351.
Practical Mental Hygiene. K. A. Menninger, Topeka.—p. 355.

Michigan State Medical Society Journal, Grand Rapids

December, 1922, **21**, No. 12

Further Experience with Two Flap Low Incision Cesarean Section. A. C. Beck, Brooklyn.—p. 489.
Heart Murmurs. J. L. Chester, Detroit.—p. 495.
*Ophthalmia Neonatorum. G. M. Waldeck, Detroit.—p. 501.
*Present Status of Surgical Treatment of Uterine Prolapse. F. C. Witter, Detroit.—p. 505.
*Method of Treatment of Pyloric Stenosis at University of Michigan Hospital. L. A. Hoag, Ann Arbor.—p. 511.

Ophthalmia Neonatorum.—This paper is based on a series of 233 cases of ophthalmia neonatorum. The gonococcus was found in 55 per cent. of cases. Corneal involvement was present in twenty-nine cases. In twelve cases but one eye was affected, in seventeen cases both eyes were affected. Corneal damage was done in 12 per cent. There was no loss of vision on leaving the hospital in 201 out of 205 cases, or 98.04 per cent. In three cases, or 1.42 per cent., there was loss of vision in only one eye, and in one case, or 0.48 per cent., total blindess resulted. The only prophylactic means employed were care and cleanliness in handling and instillation of argyrol three or four times daily in the unaffected eye. Glass protection shields were not used.

Treatment of Uterine Prolapse.—Witter urges adaptation of the method to the patient rather than the patient to the method.

Medical Treatment of Pyloric Stenosis.—The following medical treatment is conducted at the University of Michigan Hospital in a severe case of pyloric stenosis or spasm: If the infant is already dehydrated because of fluid loss due to vomiting, and the symptoms are urgent, it is given parenteral fluid as long as conditions demand it. Usually subcutaneous or intraperitoneal saline solution is given. A stomach tube is passed and the gastric contents secured for analysis and measurement. A thorough lavage with plain water is then done and the formula given through the tube. The formula usually consists of a boiled skimmed milk and water and dextrin-maltose combination, to which may be added 3 per cent. of cereal. The strength and quantity is suited to the caloric requirements of a normal infant of the same age and weight. The lavage is repeated before every feeding at first. Atropin is added to each bottle in a quantity sufficient to keep just short of the limit of tolerance, unless distinct improvement is secured before the upper limit is reached. As the symptoms decrease the number of lavages is gradually reduced, then the dosage of atropin is carefully decreased as the infant's condition warrants. The formula is also regulated from time to time so that the retained amount continues to fully cover the caloric requirements of the patient.

Missouri State Medical Association Journal, St. Louis

December, 1922, **19**, No. 12

Some Clinical Features in Diagnosis and Treatment of Heart Failure. C. J. Hunt, Kansas City.—p. 483.
*Working Hypothesis as to Cause and Cure of Pernicious Anemia. M. Pitzman, St. Louis.—p. 487.
*Leukoderma Improved by Quartz Light. N. Toomey, St. Louis.—p. 491.
Congenital Defect of Anterior Abdominal Wall and Cryptorchism. J. G. Sheldon and E. P. Heller, Kansas City.—p. 493.
Mental Disorder as Factor in High Cost of Living. F. M. Barnes, Jr., St. Louis.—p. 495.
Observations in Prostatic Urethra. C. H. Suddarth, Excelsior Springs.—p. 498.
Three Cases of Foreign Body in Bladder. J. E. Dewey, Springfield.—p. 499.
Imperforate Urinary Meatus. E. E. Whiteside, Elvins.—p. 499.
A B C Movement for Hospitalization in Counties of Missouri. F. G. Nifong, Columbia.—p. 500.

Cause and Cure of Pernicious Anemia.—Beyond the blood destruction and regeneration, Pitzman asserts, the one factor practically universal in all cases of pernicious anemia is a marked hypochlorohydria or absolute absence of gastric secretion. The evidence in the literature is summarized, both for and against the propostion that this severe and prolonged hyposecretion eventually results in pernicious anemia. The anatomico-physiologic basis is given on which it is maintained that the present dosage and timing of hydrochloric acid with pepsin is pathetically deficient—hence no reason to expect real results, either in theory or in practice. A theory is advanced which traces both pernicious anemia and many cases of gastric carcinoma back to a primary atrophy of the gastric tubules, including suggestions for prophylaxis.

Quartz Light in Treatment of Leukoderma.—Toomey has secured improvement in two cases of leukoderma by means of ultraviolet radiation. Complete pigmentation of some of the areas was obtained. More or less pigmentation was developed in all of the areas, the degree of pigmentation in

some areas effecting a very acceptable cosmetic improvement. The quartz light pigmentation of the achromic areas has persisted for more than six months with no apparent loss of the acquired pigment. The leukodermic areas that responded with complete or nearly complete pigmentation as a result of the use of the quartz light were the ones situated on the face. Achromic areas on covered surfaces of the body responded to the light with only a partial degree of pigmentation, the degree of pigmentation in an area being approximately in inverse ratio with the degree to which it had been habitually kept protected from the sun's rays.

Nebraska State Medical Journal, Norfolk

December, 1922, **7**, No. 12

Treatment of Accessory Nasal Sinus Disease in Children. H. B. Lemere, Omaha.—p. 401.
Newer Views in Treatment of Syphilitic Optic Atrophy. S. R. Gifford, Omaha.—p. 408.
Radical Mastoid Operation. E. B. Brooks, Lincoln.—p. 413.
Relation of Anaphylaxis to Practice of Eye, Ear, Nose and Throat. H. F. Morrison, Lincoln.—p. 416.
Sphenopalatine Ganglion Neurosis. C. T. Uren, Omaha.—p. 421.
Eye and Its Relations to Internal Medicine. W. L. Albin, Lincoln.—p. 424.
Acute Otitis Media in Children. C. G. Baird, Beatrice.—p. 428.
Treatment of Frontal Sinus Disease and Complications. A. G. Lueschen, Columbus.—p. 430.
Injuries to Eyeball; Report of Cases. J. B. McPherson, Hastings.—p. 434.

Northwest Medicine, Seattle

December, 1922, **21**, No. 12

*Graded Extrapleural Thoracoplasty in Chronic Pulmonary Suppuration with Special Reference to Diffuse Bronchiectasis. C. A. Hedblom, Rochester, Minn.—p. 423.
Personal Experience with Artificial Pneumothorax. G. B. Kalb, Monrovia, Calif.—p. 429.
Relationship Between Clinical Laboratory and Physician. T. A. Flood, Salt Lake City.—p. 433.

Graded Extrapleural Thoracoplasty for Bronchiectasis.—The immediate results so far achieved in the treatment of six cases of typical bronchiectasis by graded thoracoplasty, Hedblom says, seem to be distinctly encouraging. There was no mortality; marked immediate improvement occurred in all cases. The relative safety of the graded operation, the comparative freedom from pain, the amount of collapse of the chest wall, and the relatively slight deformity commend the operation. There was a reduction of sputum on the average of from 50 to 90 per cent., or even more, with an associated gain in weight and general improvement. What the ultimate results will be remains to be determined. Judging from those so far obtained, as well as from the experience of others, it would seem probable that the final results will be unsatisfactory in some cases. For such cases pneumonectomy is contemplated. The indication for thoracoplasty in chronic abscess in this series of cases was the thick walled multilocular nature of the abscess and an indeterminate amount of associated bronchiectasis, central location of the chronic abscess with the incident increased risk of hemorrhage in case of drainage, and pulmonary suppuration of the indeterminate type. From the results obtained the impression is gained that patients with chronic abscess associated with bronchiectasis are less suitable for thoracoplasty, both on account of the greater tendency to recurrence and the proneness to retention of secretion and consequent extension of the suppuration. If the patients are young and in good general condition, they may prove suitable for pneumonectomy; otherwise, a graded thoracoplasty, possibly combined with thoractomy drainage, would seem to offer the best prospect for marked relief, if not cure.

Ohio State Medical Association Journal, Columbus

December, 1922, **18**, No. 12

Classification and Surgical Treatment of Chronic Diarrhea-Colitis. S. G. Gant, New York.—p. 813.
Some Phases of Intestinal Obstruction. W. D. Haines, Cincinnati.—p. 819.
Typhoid Fever, Its Treatment and Mortality. H. Jones, Circleville.—p. 822.
Pyelitis in Puerperium. A. Rogers, Columbus.—p. 825.
Feeding of Infants Based on Recent Experience. S. D. Giffen, Toledo.—p. 829.
Treatment of Disease of Accessory Nasal Sinuses. H. I. Lillie, Rochester, Minn.—p. 834.
Physical Intranasal Conditions Favoring Involvement of Nasal Accessory Sinuses. M. Metzenbaum, Cleveland.—p. 837.
*So-Called Angioneurotic Eruptions. A. Ravogli, Cincinnati.—p. 839.
*Parkinson's Disease as Sequel to Lethargic Encephalitis. H. H. Drysdale, Cleveland.—p. 842.

Rôle of Anaphylaxis in Angioneurotic Eruptions.—According to Ravogli anaphylaxis plays a leading rôle in so-called angioneurotic eruptions. Toxins from faulty metabolism get into the circulation and are carried to the periphery where they irritate the sensory and trophic nerve filament, causing itching, hyperaemia, and cutaneous exudation. Urticaria, angioneurotic edema, dermatitis herpetiformis, pruritis and recurrent eczema are leading types of vasomotor anaphylactic skin eruptions. Protein sensitization is very useful for diagnosis and in the treatment of these distressing conditions. The treatment, which has given Ravogli the best results has been the administration of calomel in small doses from 1/6 to 1/3 grain, together with sodium bicarbonate, repeated two or three times a day. Calomel has a specific action against the yeast fungi which remain in the gastro-enteric canal, and against the colon bacilli. At the same time the use of magnesium sulphate with sodium sulphate is beneficial, removing excretory substances from the system. Sodium bicarbonate and potassium citrate restore the alkalinity of the blood and remove acidosis. In obstinate cases the administration of phenyl salicylate together with sodium bicarbonate as an intestinal antiseptic, has given good results, and obstinate cases of chronic urticaria, and of dermatitis herpetiformis have yielded to this treatment.

Parkinson's Disease as Sequel to Lethargic Encephalitis.—The twenty-three cases reported by Drysdale apparently disprove the former conception that paralysis agitans is practically confined to the presenile period of life as the majority of the patients were less than 40 years of age and two were under 20. Postencephalitic Parkinsonian syndrome seems to pursue a much more rapid course than the usual type of the disease and the prodromal or developmental period is undoubtedly shorter. Several of these cases were unmistakably atypical. One patient died after eight months invalidism and during the progress of the malady, the possibility of a basilar meningitis was entertained. Unfortunately, necropsy was denied. The evidence serves to indicate that infections are active in no small degree. All of the patients gave a history of having been victims of sleeping sickness so-called, but in a few this information lacked adequate confirmation. It is, therefore, possible that their former illness was some other form of encephalitis or a meningitis, as conditions of this character have been erroneously confounded with lethargic encephalitis. The treatment of this new problem has been most disheartening. Hyoscin hydrobromate was of value in suppressing the tremors but nothing has proved helpful in combating the ravages of the disease.

Philippine Journal of Science, Manila

November, 1922, **21**, No. 5

Philippine Parasites of Family Trigonalidae. S. A. Rohwer.—p. 417.
Malayan Aphididae. R. Takahashi.—p. 421.
Chrysomeliden der Philippinen, III. V. J. Weise.—p. 423.
Flora of Southeastern China. E. D. Merrill.—p. 491.

Public Health Journal, Toronto

November, 1922, **13**, No. 11

Variolae and Morbilli Four Centuries Ago. W. R. Riddell.—p. 481.
Venereal Disease Situation in Canada. J. J. Heagerty.—p. 485
Place of Sanitary Engineer in Public Health. F. A. Dallyn.—p. 497.
School Child and Nutrition. H. R. Y. Reid.—p. 503.
Agglutination Phenomena with Diphtheria Antitoxin. P. J. Moloney and L. O. Hanna.—p. 508.

U. S. Naval Medical Bulletin, Wahington, D. C.

November, 1922, **17**, No. 5

History of United States Naval Hospital, Fort Lyon, Colo., and Activities of Naval Medical Corps in Development of Hospital for Sanatorium Purposes. F. W. F. Wieber.—p. 745.
Kolmer Modification of Wassermann Test. J. Harper.—p. 757.
Medicinal Garden. G. W. Calver.—p. 763.
Functions and Organization of Medical Corps Units Serving with Marine Corps in Field. S. N. Raynor.—p. 771.
Hygiene of Submersibles. C. M. Belli.—p. 785.
Classification, Diagnosis and Treatment of Bone Tumors. J. W. White.—p. 802.
Sterilization of Glass Syringes. H. E. Harvey.—p. 810.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Radiology and Electrotherapy, London

November, 1922, No. 268

Employment of Electrical Methods in Diagnosis and Prognosis of Paralysis Due to Lesions of Peripheral Nerves. G. Bourguignon.—p. 161.
Treatment of Contracted Fingers and of Some Cases of Cataract by Mild High Frequency Currents and Violet Rays. C. E. Shelly.—p. 177.
Backache and Referred Pain. E. F. Cyriax.—p. 183.
Treatment of Scoliosis. W. J. Broad.—p. 187.
Backache and Referred Pain. I. Gunzburg.—p. 188.
Reeducation of Muscles. P. Kouindjy.—p. 189.

Brain, London

October, 1922, **45**, No. 2

Reflexes of Defense. P. J. Babinski.—p. 149.
Study of Sherrington Decerebrate Animal in Chronic as Well as Acute Condition. H. C. Bazett and W. G. Penfield.—p. 185.
Pathogenesis of Subacute Combined Degeneration of Spinal Cord, with Special Reference to Its Connection with Addison's (Pernicious) Anemia, Achlorhydria and Intestinal Infection. A. F. Hurst and J. R. Bell.—p. 266.
Meningiomas (Dural Endotheliomas): Their Source, and Favored Seats of Origin. H. Cushing.—p. 282.

British Medical Journal, London

Dec. 9, 1922, **2**, No. 3232

*Effect of Cessation of Irritant on Development of Experimental Tar Cancer. A. Leitch.—p. 1101.
*Production of Cancer by Specific Forms of Irritation. J. A. Murray.—p. 1103.
*Paraffin Cancer and Its Experimental Production. A. Leitch.—p. 1104.
*Experimental Production of Cancer by Arsenic. A. Leitch and E. L. Kennaway.—p. 1107.
Occupation Cancer of Paraffin and Oil Workers of Scottish Shale Oil Industry. A. Scott.—p. 1108.
Epitheliomatous Ulceration in Industry. T. M. Legge.—p. 1110.
Roentgen-Ray Cancer. C. Rowntree.—p. 1111.
*Experimental Soot Cancer. R. D. Passey.—p. 1112.
Adder Bite. T. Oliver—p. 1114.
*Simple Method of Treating Club Foot. A. S. B. Bankart.—p. 1115.
*Pneumococcal Influenza. O. F. T. East.—p. 1117.
*Case of Bronchobiliary Fistula. A. G. Yates.—p. 1117.
*Restoration of Round Ligaments. A. J. Nyulasy.—p. 1118.
Possible Case of Bronchopulmonary Spirochetosis. J. F. Johnston.—p. 1119.
Eserin Poisoning Produced by Intravenous Injection: Recovery. B. L. Slater.—p. 1120.
Colloidal Gold for Lange Test. T. Grey.—p. 1120.

Effect of Cessation of Irritant on Tar Cancer.—The experiments conducted by Leitch clearly show that when tar has been applied repeatedly for a certain length of time and the irritant is then removed, tumors, even carcinoma, may make their appearance at a later date. It must be that the irritation produces in the normal cells subjected to its influence some profound change, undetectable by the microscope, so that they eventually proliferate in an unrestrained and in a harmful fashion. Leitch believes that it may be concluded that the neoplastic response to an irritant is a slow tissue reaction that exhibits no defensive property and that subserves no useful function. The internal changes in the cells in the earliest stages are unknown.

Experimental Cancer Produced by Irritation.—Murray conducted experiments in which unaltered tar, alcoholic extract, and ethereal extract of tar were applied to separate areas of the dorsal skin of each of sixty normal mice. After four months, when the first tumor appeared, fifty mice survived, and of these twenty-five presented malignant new growths. Twenty-two animals bore carcinoma at the site painted with the ethereal extract; twelve had carcinoma at the site treated with the original tar, and two only had carcinoma at the site treated with the alcoholic extract. In one of these animals no tumors appeared at the sites treated with the apparently much more efficacious whole tar and ether extract.

Experimental Paraffin Cancer.—By the frequent application of crude shale oils containing paraffins Leitch has thus produced tumor formations in thirty out of seventy-four mice which survived the treatment for more than 100 days. Owing to the increasing death rate after that time it is impossible to say how many more would have developed tumors had they lived long enough, or how many of the simple tumors produced would have gone on to malignancy. One animal resisted for more than nine months. The disappearance of some of the simple papillomas corresponds with what is found in man. In many of the older papillomas considerable difficulty has been encountered in forming a judgment of their benignity or malignancy. Experimental evidence shows that it takes at least ten years of exposure to paraffin oils to produce cancer in man—which corresponds to actual experience.

Experimental Arsenic Cancer.—In the hope of determining experimentally if arsenic might act as a tumor producing, or carcinogenic, agent, Leitch and Kenneway fed a series of rats and mice on bread containing arsenic. The experiments were unsuccessful. Then potassium arsenite was applied locally. In three months' time two thirds of the mice had died, but a growing tumor was produced in one of the survivors. Microscopic examination of a section through the tumor showed it to be a typical squamous cell carcinoma. There were also metastases in the lung in this animal.

Experimental Soot Cancer.—Cancer was produced experimentally by Passey by means of soot mixed with quicklime. In animals fed a fat soluble vitamin poor diet the tumors appeared a little earlier.

Treatment of Club Foot.—The apparent deformity having first been fully corrected in the ordinary way by tenotomy, manipulation, and splinting, Bankart secures permanent fixation of the foot in a corrected position by means of an artificial ligament attached to the fifth metatarsal bone and to the outer side of the tibia.

Pneumococcal Influenza.—East discusses an epidemic of cases influenzal in type in which the pneumococcus was the organism found in overwhelming predominance on examination of throat swabs by direct smear and culture in every case. *Micrococcus catarrhalis* and streptococci also occurred, but were in the minority, and *Bacillus influenzae* was not seen. Pneumococci were also the cause of such complications as occurred. The symptoms varied from a slight headache, sore throat, and fever to very severe prostration.

Bronchobiliary Fistula.—Yates cites a case in which an abscess of the liver appears to have penetrated the diaphragm and discharged itself into the lung, and at the same time to have effected a communication with one of the larger bile passages, with the result that pure bile continued to escape long after all pus had disappeared.

Restoration of Round Ligaments.—The operation devised by Nyulasy consists in splitting the anterior leaf of the broad ligament parallel to the round ligament, between the round ligament and the bladder, undermining the opening, and closing it by a purse string suture, the outer limit of the suture being in the vicinity of the internal abdominal ring and the inner limit being toward the uterine cornu. The immediate effect is to bring the uterus into anteversion, and the undue laxity of the anterior leaf of the broad ligament is reduced.

Indian Medical Gazette, Calcutta

November, 1922, **57**, No. 11

Therapeutics of Cinchona Alkaloids. R. N. Chopra.—p. 401.
Analysis of Clinical Picture in Kala-Azar. L. E. Napier.—p. 406.
Production and Pharmacologic Action of Khesari Amine. H. W. Acton and R. N. Chopra.—p. 412.
Care of Women and Children in Indian Industries. D. F. Curjel.—p. 415.
Case of Salivary Calculus. G. D. Mall.—p. 418.
Case of Bronchomoniliasis. M. J. Parmanand.—p. 418.
Case of Oxyuris Vermicularis in Vermiform Appendix. W. L. Harnett.—p. 419.

Journal of Laryngology and Otology, Edinburgh

December, 1922, **37**, No. 12

Benign Forms of Otogenic Meningitis. H. Mygind.—p. 597.
Relations of Optic and Vidian Nerves to Sphenoid Sinus. G. Young.—p. 613.

Lancet, London

Dec. 9, 1922, **2**, No. 24

Forty Years in History of Tuberculosis. P. Kidd.—p. 1207.
*Relation of Calcified Abdominal Glands to Urinary Surgery. J. T Walker.—p. 1213.

Case of Paroxysmal Hemoglobinuria. L. S. Hannema and J. R. Rytma. —p. 1217.
*Variations of Blood Pressure Under Intravenous Injections of Phenolic Compounds (Arsenobenzol, Arsphenamin, Neo-Arsphenamin, etc.). M. Pomaret.—p. 1220.
*Isolation and Preservation of Tubercle Bacilli by Means of Glycerin. C. C. Twort.—p. 1221.
*Urea Content of Cerebrospinal Fluid. J. S. Anderson.—p. 1221.
Case of Club-Hand. A. Mourad.—p. 1222.

Calcified Abdominal Glands.—In eleven of forty-two cases of calcified abdominal glands Walker operated and removed the glands. In ten of these cases the operation was planned for the removal of the glands, and in one case a calculus was removed from the kidney and the gland was uncovered in stripping up the ascending colon. It was removed at the same time. The result of the operation in these cases was the disappearance of the pain, whether it had the form of constant aching or recurrent attacks of colic. Walker's view in regard to adults by whom the calcareous end stage of tabes mesenterica has been reached, is that operation is only justifiable in those cases in which symptoms are severe and are proved to be directly due to the calcified glands. These cases can be selected only after investigation by thorough modern methods of examination.

Variations of Blood Pressure Caused by Phenolic Compounds.—The experiments reported on by Pomaret show that phenomena of shock under intravenous injections of arsphenamin and neo-arsphenamin are phenolic shocks, resembling the shocks registered after intravenous injections of more simple phenolic compounds, such as trinitrophenol and phenol. The shock is the more profound according as the solution injected is more acid, and consequently more precipitating (flocculating) with blood plasma. Intramuscular injections of these compounds do not produce in dogs the cardiovascular troubles registered.

Preservation of Tubercle Bacilli by Means of Glycerin.—The method employed by Twort is as follows: A large platinum loopful of sputum or other material from which acid fast bacilli are to be isolated, is inoculated into tubes containing 1 c.c. of pure glycerin, 75 per cent., 50 per cent., and 25 per cent. glycerin in physiologic solution of sodium chlorid. After remaining for twenty-four hours at room temperature, cultures are made on Dorset's 4 per cent. glycerin egg medium or Petroff's medium. If contaminations are numerous in all the tubes, further cultures are made on the third day. Sometimes all contaminating bacteria are destroyed after remaining twenty-four hours in glycerin, but more frequently they are not all destroyed, and the tubes may be very heavily contaminated. It may be necessary to revert to a third culture after a week; but the tubercle bacilli themselves do not appear to survive for longer than from three to four weeks. So far, by the use of glycerin, Twort has not once failed to isolate, with extreme ease, the tubercle bacillus from any specimens in which the bacillus has been demonstrated microscopically. Specimens, if left sufficiently long in glycerin have uniformly given pure cultures of the tubercle bacillus, even though originally containing very numerous contaminating micro-organisms.

Urea Content of Cerebrospinal Fluid Has Diagnostic Value.—In an obscure case Anderson succeeded in making a diagnosis of uremia by an examination of the cerebrospinal fluid which contained 310 gm. urea per hundred cubic centimeters.

Medical Journal of Australia, Sydney

Oct. 28, 1922, **2**, No. 18

Flies and Infectious Disease. L. Harrison.—p. 489.
Biology of House Fly. T. H. Johnston.—p. 494.
*Habronemic Conjunctivitis in Man Producing a "Bung Eye." L. B. Bull.—p. 499.
Thyroidectomy. M. O'G. Hughes.—p. 501.

Habronemic Conjunctivitis.—A small tumor removed from the conjunctiva of a child, aged 13 months, was found by Bull to be caused by *habronema* which in the adult stage are parasites in the stomach of the horse. This granulomatous condition occurs on the external mucous membranes of the horse, viz., conjunctiva and urethra at the orifice, and also on other parts of the external surface of the body and a pulmonary form has been described.

Bulletin de l'Académie de Médecine, Paris

Nov. 14, 1922, **88**, No. 37

*Tuberculosis and Pregnancy. Bar.—p. 219.
*Value of Vaccine Against Typhoid Fever. Loir and Legangneux.—p. 241.
*Prevention of Diseases in Morocco. R. Martial.—p. 244.
Hyperostosis of Tibia and Fibula Due to Leprosy. G. Delamare.—p. 247.
*Roentgen Epitheliomas Cured by Diathermy. H. Bordier.—p. 248.

Tuberculosis and Pregnancy.—Bar is pessimistic concerning the influence of pregnancy on tuberculosis. Very often the danger confronting the woman disappears under the cover of the physiologic euphoria of the second half of pregnancy until the tuberculosis flares up. The last stage of pregnancy is particularly unfavorable to tuberculosis, just as it is to influenza, smallpox, malaria and other infectious diseases, none of which are helped by the termination of pregnancy at this late stage. The cause is not certain, but Bar agrees with Fiessinger and Brodin's views on hepatic insufficiency as the cause of lowered resistance in pregnancy. Experiments on animals indicate clearly the disastrous influence of pregnancy on the development of tuberculosis, and it was interesting to see that the liver is a site of predilection in these animals as well as in pregnant women. Pregnancy is, according to Bar, a serious event in every woman with active tuberculosis, a disaster in advanced bilateral cases, and a real and sometimes very severe risk in every woman endangered by an active tuberculosis. He emphasizes the importance of the cutaneous reactions with tuberculin. If a woman in the beginning of pregnancy shows a strong reaction, Bar is conservative, provided that the findings in the lungs are satisfactory. If, on the contrary, such a woman has only a feeble cutaneous reaction, or none at all, one should operate, especially if the lesions seem to have started with the pregnancy. He prefers a simple abortion during the first months, and rarely resorts to hysterectomy. He does not like to operate in the second half. The necessity for after-treatment is evident.

Value of Vaccine Against Typhoid Fever.—Loir and Legangneux bring a statistic confirmation of the protective value of vaccination.

Prevention of Diseases in Morocco.—The tendency of the French government in Morocco is to adopt the principles of hygiene to the life of the people, instead of trying to change the habits of Mohammedans. He describes the methods used in the fight against typhus at Fez.

Multiple Roentgen Epitheliomas Cured by Diathermy.—Bordier recommends the use of diathermy for the removal of roentgen-ray epitheliomas, describing two apparently absolutely successful cases. He was himself the subject in one.

Bulletin Médical, Paris

Nov. 18, 1922, **36**, No. 47

*Chronic Bronchitis and Pulmonary Emphysema. E. Sergent.—p. 935.

Chronic Bronchitis and Pulmonary Emphysema.—Sergent emphasizes that almost every emphysema is complicated by a bronchitis, while not every chronic bronchitis has an emphysema. The question whether chronic bronchitis is accompanied by emphysema may be very difficult and even impossible to solve clinically, according to Sergent. The etiologic diagnosis is extremely important, as tuberculosis, syphilis, cardiac and renal troubles, diatheses, diseases of the upper respiratory passages may be the causes and have to be treated accordingly. He believes that emphysema is caused by the bronchitis mechanically, and is increased by inflammatory changes. One should not forget to consider, besides, a congenital dystrophy of the connective tissue of the lungs.

Bulletins de la Société Médicale des Hôpitaux, Paris

Nov. 17, 1922, **46**, No. 32

*Cryptogenous Septicemia. A. Clerc and G. Perrochaud.—p. 1512.
*Treatment of Hereditary Syphilis. J. Comby.—p. 1515.
*Scleroderma and Pituitary. R. Bénard and E. Coulaud.—p. 1518.
Herpes Zoster and Varicella. A. Cayrel.—p. 1524.
*Sclerodermic Syndrome with Goiter. Laignel-Lavastine and E. Coulaud. —p. 1526.
Erythema Nodosum and Herpetic Tonsillitis. J. Troisier.—p. 1530.
*Hemibulbar Retro-Olivary Syndrome. Ardin-Delteil et al.—p. 1535.
Syringe for Blood Transfusion. Emile-Weil and Isch-Wall.—p. 1537.

Cryptogenous Septicemia.—Clerc and Perrochaud's patient presented an intermittent fever, an eruption resembling rubella, arthralgias and a relative neutrophilia. Although no signs of meningitis were present and the cultures remained negative, they used antimeningococcus serum with good results.

Treatment of Hereditary Syphilis.—Comby urges not to forget mercury and iodids.

Scleroderma and Pituitary.—Bénard and Coulaud's case was refractory to the administration of thyroid, and was favorably influenced by the pituitary gland. This does not speak necessarily against the thyroid origin, according to them. Their patient died, and changes in the pituitary, adrenals and thyroid were found.

Sclerodermic Syndrome with Goiter.—Laignel-Lavastine and Coulaud report a case of scleroderma with atrophy of phalanges in a woman with goiter and tuberculosis. The cutaneous tuberculin reaction was negative, but turned positive when repeated after stopping the administration of thyroid and giving powdered ovary for ten days.

Hemibulbar Retro-Olivary Syndrome.—The case presented by Ardin-Delteil was due to syphilis.

Presse Médicale, Paris

Nov. 15, 1922, **30**, No. 91

*Vaccines Sterilized by Formaldehyd. S. Costa.—p. 985.
*Bilirubinemia in Icterus. M. Brulé et al.—p. 986.

Vaccine Sterilized with Formaldehyd.—Costa points out that formaldehyd is an excellent germicide, conserves the bacteria well while conserving their immunologic properties and destroying toxins. The emulsion of the culture is brought up to contain 1/50 to 1/100 of a 40 per cent. formaldehyd solution, and is preserved in the icebox. One can remove the formaldehyd by centrifugating the emulsion, but the presence of 1/8000 is not painful.

Bilirubinemia in Icterus.—Brulé, Garban and Weissmann object to van den Bergh's method that it gives intermediary stages between the direct and indirect reaction for bilirubin. Besides this, they find that it may change in the same patient in different stages, and believe that it is due to the amount of bilirubin in the serum. They compared the test with Blankenhorn's dialyzing of bilirubin. If the bilirubinemia is low and van den Bergh's reaction is slow (indirect), no bilirubin dialyzes. But in cases of a stronger bilirubinemia, reaction may be direct and yet the bilirubin may not dialyze. Brulé and his co-workers believe that the bilirubin which is adsorbed to the proteins of the plasma, gives the indirect reaction; does not dialyze, and does not appear in the urine. If the amount of it in the blood is too large, one part of it remains free and gives the direct reaction. Therefore they conclude that it indicates only the degree of bilirubinemia, but not a different sort.

Progrès Médical, Paris

Nov. 18, 1922, **37**, No. 46

*Internal Secretion and the Blood. M. Perrin and A. Hanns.—p. 537.
*Treatment of Complicated Gonorrhea. Legueu.—p. 538.
Ergot. H. Vignes.—p. 540.

Internal Secretion and the Blood.—Perrin and Hanns discuss the influence on the blood cells of experimental and clinical changes in the glands with internal secretion.

Treatment of Complicated Gonorrhea.—Legueu emphasizes the fact that the majority of complications of gonorrhea is caused by wrong treatment, especially by using too strong solutions too often. In prostatitis, it is necessary to put the patient to bed, to give him two sitz baths daily, which ought to be as hot as he can stand. Belladonna suppositories should be given in the rectum. The irrigations have to be mild. Phlegmonous prostatitis must be opened from the perineum. Legueu has never seen any good from incisions of an epididymitis. He recommends rest in bed and ice bags. The skin of the scrotum must be protected by a double layer of cloth, to avoid necrosis. Mild irrigations should be continued. The seminal vesicles are always affected in these cases. Mild massage preceding the irrigations gives good results. Every patient who treats himself gets cystitis. It is cured by injecting a 1 per cent. solution of silver nitrate into the bladder (after an irrigation). If gonococci do not disappear in two or three months, vaccines are of use.

Nov. 25, 1922, **37**, No. 47

Influence of Pregnancy and Delivery on the Pelvic Statics. H. Vignes.—p. 549.
Delirium, Belief and Play. Laignel-Lavastine.—p. 553.
*Treatment of Vascular Spasms by Sympathectomy. J. Forestier.—p. 558.

Treatment of Vascular Spasms by Periarterial Sympathectomy.—Forestier reviews favorably this field. The operation proved useful on the internal carotid in corneal ulcers due to injuries of the head, on the brachial artery in Raynaud's disease, on the hypogastric in craurosis of the vulva, and on the femoral artery in varicose ulcers. It is useful not only in angiospasms, but also in symptoms due to an overactivity of vasodilators.

Revue Franç. de Gynécologie et d'Obstét., Paris

October, 1922, **17**, No. 10

*Malformations of Fallopian Tubes. F. Jayle and Halpérine.—p. 489.
*Obstetric Future After Incision of Cervix. P. Balard.—p. 525.

Malformations of Fallopian Tubes.—Jayle and Halpérine refer in particular to blind accessory passages which, they say, are comparatively common. By examination of serial vertical sections of tubes they have discovered a number of malformations, two passages instead of one, accessory parts, supernumerary tubes, and rudimentary tubes in the broad ligament. They give twenty illustrations of these various types of malformations, of which about a dozen cases have been published in all, and describe in detail four cases personally observed of accessory passages without outlet. In one case these accessory passages were found in a ruptured tubal pregnancy. In another case the walls of both tubes and of the uterus were exceptionally thick, and a cross section of the tube on one side showed three passages and a patch of ossification. They explain the embryonal mechanism which entails these blind passages, parallel with the general direction of the tube, of congenital origin. A diverticulum is the result of some pathologic process.

The Obstetric Future After Incision of Cervix During Childbirth.—Balard has compiled 39 cases of women requiring deep incision of the cervix during childbirth who have passed through one or more pregnancies since. Conception afterward is rare. Hauch knows of only 15 per cent. in his 159 cases. In this group of 26 women there were 2 abortions; cesarean section was required later in 6; basiotrypsy once; and there were 2 deaths from placenta praevia with grave nephritis or atony of the uterus. In Hauch's service the incision of the cervix is restricted to the intravaginal portion of the cervix. When more than this is required, vaginal cesarean section is given the preference. The cervix is reconstructed after the incisions to restore its shape and leave it supple. The apparent facility of the incisions should not mislead to underestimate their influence on future pregnancies, although properly done they do not gravely compromise the obstetric future.

Schweizerische medizinische Wochenschrift, Basel

Nov. 23, 1922, **52**, No. 47

*Roentgen Ray Treatment of Epilepsy. M. Steiger.—p. 1141.
*Familial Multiple Sclerosis. F. Lotmar.—p. 1146.
Therapeutic Increase of Blood Coagulability. P. F. Nigst.—p. 1148. Conc'n No. 48.
Trauma and Tuberculosis of Bones and Joints. F. Zollinger.—p. 1154. Conc'n.

Treatment of Epilepsy by Roentgen Rays.—Steiger finds that it would be premature to conclude from his fifteen cases of epilepsy treated by the roentgen rays, that the benefit observed in some was due to this treatment.

Familial Multiple Sclerosis.—Lotmar describes this rare coincidence in two sisters.

Annali Italiani di Chirurgia, Naples

Aug. 30, 1922, **1**, No. 6-7

*Treatment of Aneurysms. G. Pascale.—p. 441. Conc'n.
*Fracture of Neck of Scapula. G. Razzaboni.—p. 454.
Primary and Solitary Hydatid Cyst in Omentum. G. Bolognesi.—p. 466.
*Treatment of Congenital Vaginal Anus. U. Camera.—p. 473.
*Spontaneous Cures of Cancer. D. B. Roncali.—p. 485. Conc'n.
*Paget's Disease. C. Gargano.—p. 500.
Staphylococcus Vaccine Therapy. V. Simeoni.—p. 519.
Cortical Blindness After a War Wound. G. Berti.—p. 536.

Aneurysm of Large Pelvic Vessels.—Pascale has had extensive experience in this line. In two young men the aneurysm retrogressed completely under treatment for syphilis, and he warns that in all dubious cases specific treatment should be given a chance before attempting any operation. Under other conditions, surgical treatment is indispensable, and for traumatic aneurysms he advocates extirpation of the sac as the only measure to protect against mishaps later. If the sac cannot be entirely removed, it can be opened and cleared, and the superfluous wall removed. Ligation of the artery above the aneurysm should be reserved for the last resource. An arteriovenous aneurysm should be treated by resection of the sac between the four ligatures. An aneurysm of a small artery on a limb should always be resected, as collateral circulation can be counted on. With a spontaneous aneurysm, the general medical treatment is the main thing. He describes a special technic for operating on an arteriovenous aneurysm of the internal carotid, with pulsating exophthalmos, and extols it as great progress in treatment of this grave lesion. He describes two cases of aneurysm of large vessels in the pelvis, and remarks in conclusion that in his surgical service at Naples a special study has been made of aneurysms for many years.

Complications of Fracture of the Scapula.—Razzaboni describes what he calls plexiform angioneurolysis in the axilla, an operation to correct symptoms resulting from the complications of fracture of the scapula.

Congenital Vaginal Anus.—Camera describes the technic with which he operated on a child of 3 with an opening between the rectum and vagina and complete incontinence of feces. He began by diverting the stools by an artificial anus after thorough purging. The distal bowel was repeatedly flushed from the artificial anus until the water came through clear. Then the coccyx was resected to give ample access to the rectum which showed no signs of a sphincter when opened. The communication with the vagina was sutured and the wall of the vagina reconstructed. Two months later the artificial anus was closed. The new anus is not yet continent but seems to be becoming more continent as time passes. The levator ani muscles have been known to assume the functions of a sphincter (Delbet), and there seems to be a suggestion of this in this case.

Spontaneous Cures of Cancer.—Previous instalments of Roncali's review of this subject have been summarized as they appeared. He cites ninety-eight articles, his final conclusion being that a natural or spontaneous cure of true malignant disease has never been demonstrated. In extremely exceptional cases the primary cancer may retrogress when metastases develop, but the malignant disease as a whole continues its course.

Paget's Disease of the Nipple.—Gargano presents evidence to prove that Paget's disease of the nipple is an epithelioma.

Pediatria, Naples

Nov. 15, 1922, **30**, No. 22

Stepthrothrix Meningitis in Children. F. Fonzo.—p. 1043.
Intracranial and Spinal Hemorrhages in the New-Born. F. de Angelis.—p. 1054. Idem.—p. 1083.
Pathology of Bones. A. F. Canelli and G. B. Audo-Gianotti.—p. 1057. Cont'd.
*Cholesterin Content in Leishmaniasis. G. Castorina.—p. 1076.
Case of Intermittent Acrocyanosis in Hereditary Syphilis. M. A. Torroella.—p. 1081.

Cholesterin Content in Leishmaniasis.—Castorina found the cholesterin content of the blood in seventeen cases of internal leishmaniasis low, from 0.106 per cent. to 0.05 per cent. Only one case had 0.14 per cent. This case was examined at the beginning of the disease, while the general state was still good. During convalescence the amount usually became higher.

Policlinico, Rome

Nov. 13, 1922, **29**, No. 46

*Changes in Testicle and Epididymis After Resection of Some of the Spermatic Veins. G. Nicastro.—p. 1501.
Multiform Erythema. C. Manassei.—p. 1502.
*Hydatid Fremitus in Bladder. D. Maselli.—p. 1507.

Changes in Testicle and Epididymis After Resection of Spermatic Veins.—Nicastro found that in dogs the resection of the posterior group is followed by severe changes in the testicle, while the resection of the anterior group did not have bad results. The experiments are important for the treatment of varicocele.

Hydatid Fremitus in a Distended Urinary Bladder.—Maselli shows that other cysts or similar organs may present a typical tremulous impulse on palpation like a hydatid cyst.

Nov. 20, 1922, **29**, No. 47

*Experiments on Hydrocephalus. A. Chiasserini.—p. 1525.
Development of Vaccine Pustules by Direct Contact. C. Ramorino.—p. 1527.
*Oxygen to Start a Pneumothorax. G. Capuani.—p. 1530.
Comment on Nicolich's "Roentgenotherapy of Carcinoma of the Bladder." G. Sighinolfi.—p. 1532.
Prevention of Diseases Among Railway Employees. Dragotti.—p. 1536.

Experiments on Hydrocephalus.—Chiasserini produced in dogs a rapid accumulation of fluid in the lateral ventricles of the brain by occluding the aqueduct of Sylvius.

Oxygen to Start a Pneumothorax.—Capuani follows the advice of authors who recommend the use of oxygen to start a pneumothorax in difficult cases.

Archivos Latino-Amer. de Pediatría, Buenos Aires

September, 1922, **16**, No. 9

Disturbances in the Artificially Fed. L. Morquio.—p. 513. Cont'd.
*Congenital Myxedema. A. Armand Ugón.—p. 524.
Tumor in Median Lobe of Cerebellum. R. Chiappori and L. Velasco Blanco.—p. 528.
Purulent Conjunctivitis in the Newly Born. C. M. Berro.—p. 533.
Influenzal Croup. Six Cases. A. M. Bargo.—p. 539.
Typhoid in Children at La Plata, 1912-1921. C. S. Cometto.—p. 548.
Cerebral Hemorrhages in Boy of 11. José Bonaba.—p. 556.
*Purpura with Ventricular Hemorrhage. E. Portu Pereyra.—p. 562.

Congenital Myxedema.—The child's condition improved somewhat under thyroid treatment begun when it was 11 months old. The mother, aged 38, had a goiter of twenty-two years' standing, and of late years had presented symptoms of hyperthyroidism.

Purpura with Ventricular Hemorrhage.—The boy of 13 did not seem very sick, the fifteenth day of mild Werhof's disease, when the hemorrhage into the ventricle proved fatal. Pereyra knows of only three cases of meningeal hemorrhage on record in the course of purpura in recent years. In two the disease was very grave but, in one, it was mild as in his own case.

Prensa Médica Argentina, Buenos Aires

Aug. 20, 1922, **9**, No. 8

*Slow Endocarditis. T. Castellano and R. Garzón.—p. 189. Conc'n No. 12, p. 314.
Besredka's Antigen in Diagnosis of Tuberculosis. A. Bachmann and A. F. Poiré.—p. 197.
*Cholecysto-Enterostomy. N. Tagliavacche.—p. 198.
*Retention of Urine in the Female. A. Calmens.—p. 200.
Benzyl Benzoate in Therapeutics. P. M. Barlaro.—p. 204.

Slow Endocarditis.—Castellano and Garzón give a profusely illustrated report of a case of *Streptococcus viridans* endocarditis lenta, comparing the clinical and bacteriologic findings with the pathologic anatomy. The patient was a woman of 35 with an apparently healthy son 8 years old. At 14 she had had acute articular rheumatism, and this had entailed dyspnea on exertion, and four of her children died soon after birth. The malignant endocarditis developed with pains in bones and muscles and left hypochondrium, and ran a nine months course. The viridans and also hemolytic streptococci were found in the cultures. The hemolytic cultivated from the blood evidently became transformed into the viridans. The latter alone was found in the organs, as also in rabbits, inoculated with the patient's blood. In treatment, vaccines and transfusion of blood and splenectomy seem to

be the only measures that have offered any chance of benefit. Four cases have been published in which recovery followed transfusion of blood (300 or 400 c.c. a week). Death seems to occur from the general infection rather than from the heart.

Plastic Cholecystenterostomy.—Tagliavacche demonstrated at the local surgical society in 1919 an apparently healthy dog on which he had performed a special plastic operation six months before. (The technic was described in the *Prensa Médica*, Oct. 30, 1919.) Three years later he killed the animal, and the illustration here shows the perfect success of the operation. The liver is of normal size and aspect. The ligature of the common bile duct is still in place, and the passage is still impermeable. The new plastic duct, uniting the gallbladder and the cystic duct with the duodenum, had evidently worked perfectly during the three years and three months before the dog was killed.

Retention of Urine in the Female.—There was nothing organic to explain the period of retention of urine in the girl, eight months after the onset of menstruation and again two years later. After the urine had been systematically drawn for a time, the practice was abruptly discontinued, and the girl began to urinate normally, and menstruation became regular again, confirming the psychopathic origin.

Sept. 20, 1922, **9**, No. 11

*Eosinophilia in Stomach Fluids. C. Bonorino Udaondo.—p. 281.
*Prevalence of Neurosyphilis. M. Alurralde.—p. 283.
Hydatid Cyst in Upper Arm. N. Tagliavacche.—p. 288.
The Hospital Problem in Argentina. E. Catalán.—p. 291.

Eosinophilia in Stomach Content.—Bonorino Udaonda found local eosinophilia pronounced in the six cases of achylia tabulated. In all there was some grave organic disease. The findings were constantly negative in transient or persisting functional achylia.

Increasing Prevalence of Neurosyphilis.—Alurralde declares that inadequate arsenical treatment of syphilis merely deprives the organism of its resisting powers, without eradicating the infection. The spirochetes thus have freer play than in absolutely untreated syphilis, and their ravages are graver. Resumption of medication then is liable to entail serious meningeal reactions, like a kind of Herxheimer reaction.

Repertorio de Medicina y Cirugía, Bogota

July, 1922, **13**, No. 10

*Mechanism of Hearing. V. Ribón.—p. 518.
Electrotherapy. I. Rodríguez.—p. 527.
Alcoholism in Colombia. E. Montaña.—p. 541. Cont'n.
Antityphoid Serotherapy. Luis F. Buenaventura G.—p. 554. Conc'n.

Mechanism of Hearing.—Ribón has made a special study of the psychophysiology of hearing, and especially of audition of music. He summarizes the various hypotheses in vogue to explain the mechanism of hearing and the musical sense, emphasizing the psychologic element, and that the organ of hearing has not yet reached its full evolution.

Revista de la Asoc. Méd. Argentina, Buenos Aires

July-August, 1922, **35**, No. 213-214

*Bacteriophagy. C. E. Pico.—p. 293 and p. 297.
*Biology of an Argentine Rodent, the Vizcacha. L. Giusti and E. Hug.—p. 300.
*Refractometry of the Serum in Pregnancy. Mazza and Iraeta.—p. 313.
*Hemoclastic Crisis in the Pregnant. S. Mazza and D. Iraeta.—p. 319.
*Action of Epinephrin. J. Guglielmetti.—p. 324. Idem. B. A. Houssay.—p. 329.
*Chronic Synovitis. O. Ivanissevich.—p. 333.
Paget's Disease of the Nipple. A. Buzzi.—p. 339.
*Bone Implants in Spondylitis. A. Gutiérrez.—p. 342.
*Loose Bodies in Knee. R. Rodríguez Villegas.—p. 356.
*Traumatism of Undescended Testicles. A. G. Gallo.—p. 359
Fracture of Scapula. N. Tagliavacche.—p. 364.
*Fracture of Skull. V. Gutiérrez.—p. 368.
*Shifting the Ulnar Nerve. P. Jáuregui.—p. 377.
Pincers for Dissecting Nerve Fibers. P. Jáuregui.—p. 382.
Microscopy of Living Eye. E. Amoretti.—p. 385.
Associated Movements of Eyelid and Jaw. A. Tiscornia.—p. 390.
The Fight Against Uterine Cancer. C. A. Castaño.—p. 395.
Model School Building. A. Gelly Cantilo and A. Zwanck.—p. 404.
Proposed League for School Hygiene. A. Restagnio.—p. 425.
*Cystic Spinal Meningitis. R. H. Chiappori and C. Robertson Lavalle.—p. 433.
Paraplegia from Polyneuritis. J. C. Montanaro.—p. 438.

History of Bacteriophagy.—Pico quotes from an article by Emmerich and Low to prove that these authors called attention in 1899 to bacteriologic enzymes as a factor in acquired immunity, and the self-limitation of infectious diseases. Gamaleia also published that year an article on bacteriolysins, and Malfitano in 1900 on autolysis of the anthrax bacillus. These workers thus noted the microbian lysis, but they did not recognize its transmissibility through indefinite passages in vitro which d'Herelle has emphasized. Pico describes experiments which seem to show that the lytic principle is contained in the bacteria themselves.

Physiologic Research on Rodent.—Giusti and Hug report considerable research on *Lagostomus trichodactylus*, the viscacha, an Argentine rodent.

Refractometer Index of the Serum of the Pregnant.—Mazza and Iraeta tabulate the findings in sixteen primiparas and twenty others.

The Hemoclastic Crisis in the Pregnant.—Fully 36 per cent. of the forty-four pregnant women tested after ingestion of 200 gm. of milk, fasting, showed the typical drop in the leukocytes. All were supposedly healthy.

Action of Epinephrin.—Guglielmetti concludes from his research on striped muscle that epinephrin acts on the intermediate substance which is found at the point of junction of the muscle and the nerve.

Epinephrin and Hypertension.—Houssay refers to the share of epinephrin in the rise in blood pressure on irritation of the splanchnic nerve or bulbar puncture.

Chronic Synovitis.—Ivanissevich reports a case of disease of the knee in which the diagnosis wavered between syphilitic synovitis and a joint lesion of nervous origin. No improvement was realized under arsenicals, mercury and iodid, but examination three years later showed an intense tremor. The Wassermann reaction had never been positive and the knee was not painful, notwithstanding the chronic synovitis and hydrarthrosis. The cause is still a mystery, although the presumption is in favor of syphilis in spite of the negative serologic and therapeutic data.

Rib for Albee Implant in Spine.—Gutiérrez used a rib, rather than a strip from the tibia, for the Albee operation in the case reported. The gibbus was so pronounced that the implant had to be curved. The rib used had been taken from another woman during an operation on the chest, and had been kept in saline for two weeks. In four other cases he resected and implanted one of the patient's ribs. In one case the compress containing the rib was dropped on the floor, and the operation was delayed while the rib was boiled for twenty minutes.

Extraction of Loose Bodies in the Knee.—The operation is immensely facilitated if the loose body is held immovable with a small fine awl driven through the skin into it. Otherwise it slips around, and may require much groping for it.

Traumatism of Undescended Testicle.—The trauma in the man of 26 had caused the testicle to enlarge, and the tumor was removed twelve days after the accident. The microscope showed incipient malignant degeneration of sarcomatous type.

Fracture of Skull.—There was depression of the bone at the site of the fracture, and it was removed, with the cicatricial dura. The gap left was closed nine months later with a Müller-König osteoplastic operation. The man of 40 seems to have completely recovered except for very rare and slight dizziness.

Shifting the Ulnar Nerve.—Jáuregui illustrates his method of shifting the nerve at the elbow to a region where it is less exposed to injury and strain, in treatment of fracture, neuritis, etc.

Compression of Spinal Cord by Cystic Meningitis.—Symptoms on the part of the eyes accompanied the symptoms indicating pressure on the cervical spinal cord. The laminectomy released a gush of fluid and the symptoms all subsided at once or gradually. The cyst occupied the space of the fifth to the eighth cervical roots, and certain fibrous bands had to be resected to restore free circulation in the spinal canal. The first symptoms had been pains in the arms and back of the eyes, with impairment of vision. By the end of

the second year, when the operation was performed, there was complete quadriplegia, and the Bernard-Horner and the Brown-Séquard syndromes, with atrophy of the left optic disk, just beginning in the other. The young woman recovered the use of the legs completely after the operation, and seems to be slowly regaining the use of her arms.

Revista Española de Medicina y Cirugía, Barcelona

July, 1922, **5**, No 49

*Syphilitic Asthma. José Calicó.—p. 372.
Care of the Insane in Different Countries. S. A. Meza and J. Paulis.—p. 374.
*The Antecedents of Uterine Cancer. C. Stajano.—p. 377.
Evolution of French Surgery. Forgue.—p. 383.
Dietetic Treatment. A. Arteaga Pereira.—p. 390.

Syphilitic Asthma.—Calicó recalls that in Leredde's series of cases of asthma of syphilitic origin (1917), the syphilis had been inherited in twenty. Castex since then has published nine cases, and commented on the nocturnal character of the attacks as an almost constant feature of syphilitic manifestations. Calicó urges that the possibility of inherited syphilis should always be borne in mind, even when apparently most improbable. In Sézary's recent case, the asthma developed at the age of 36, and bronchopulmonary sclerosis and enlarged glands nearby and a positive Wassermann reaction gave the clue, which led to the cure of the asthma under mercurial treatment. Calicó reports a further convincing case in a woman of 56 who had had transient attacks of dyspnea since childhood. Her brothers show signs of inherited syphilis, and she gives a weak Wassermann reaction. Under a year of mercurial inunctions and potassium iodid the asthma and tendency to slight cyanosis have materially improved, and she says she never felt so well as now.

Antecedents of Uterine Cancer.—Stajano argues that the modifications in endocrine functioning—especially ovarian functioning—which form the menopause, alter conditions in the uterine cervix. This opens the portal to malignant disease at this point. Various other factors—intercurrent syphilis, typhoid, intense emotions, or the like—may modify endocrine functioning, and thus secondarily alter conditions in the cervix even in the young, and the satellite cancer may develop. When it does develop under these conditions, all the catabolic functions are so active that the cancer runs a rapidly fatal course. He has never found any record of cancer of the cervix under 23 and it is very exceptional after 64. The uterine cervix is prematurely aged by inherited or acquired taints, as he shows by his list of thirty-seven cases of this "cervical cancer" in young women. In nearly all it had been preceded by some known predisposing factor, usually syphilis, very severe typhoid, or rapidly recurring pregnancies, aging the women prematurely.

Deutsche medizinische Wochenschrift, Berlin

Nov. 3, 1922, **48**, No. 44

*Congenital Diseases and Constitutional Abnormities. A. Greil.—p. 1471.
Treatment of Asthma Attack. Schottmüller.—p. 1474.
To Lengthen Limbs. M. Zondek.—p. 1475.
Psychic Changes After Wound of Frontal Lobe. R. Veit.—p. 1475.
*Old Congenital Luxation of Hip Joint. C. Deutschländer.—p. 1476.
Sputum Disinfection. F. Simon and G. Wolff.—p. 1478.
Diagnosis and Treatment of Urinary Hemorrhage. L. Casper.—p. 1480.
Diagnosis and Treatment of Chronic Diarrhea. L. Kuttner.—p. 1481.
Technic for Functional Tests of the Ear. Haike.—p. 1483.
Causes and Prevention of Roentgen-Ray Burns. L. Rothbart.—p. 1485.
A Cuff for Blood Pressure Measuring Apparatus. J. Treis.—p. 1485.
Comment on Proposed Tuberculosis Law in Prussia. K. Süpfle.—p. 1486.
Legal Aspects of Scientific Criticism. F. Leonhard.—p. 1487.

General Causes of Congenital Diseases and Constitutional Abnormalities.—Greil reviews the possible causes of congenital abnormalities, including the predisposition to tumors. No other placentate animal is exposed to such unfavorable intra-uterine conditions nor to a similar mistreatment during nursing as some human beings. The conception should be limited to the first week of the intermenstrual period. The overabundant resorption of sperma, which occurs only in the human species, is harmful. Too young and too old mothers do not have the best offspring. Pregnancy toxicoses can be the cause of latent congenital anomalies. Exogenous factors (syphilis, tuberculosis, malaria) are also to be considered.

Treatment of Old Congenital Luxation of Hip Joint.—Deutschländer declares that operative treatment gives good results even in children 8 to 15 years old. In two thirds of the cases, after the operation, the head of the femur lies in the center of the acetabulum, while in 30 per cent. it remains excentric. Though the function is not perfect in this group, it may be sufficient even for outdoor sports. In cases which are over 15 years old, a complete anatomic cure is very rare as yet.

Nov. 10, 1922, **48**, No. 45

*Bronchial Asthma. A. Barth.—p. 1503.
*The Function of the Spleen. H. Rautmann.—p. 1504.
Ankylosis of the Spine and Disturbances of Internal Secretion. C. Cohn-Wolpe.—p. 1505.
Periodic, Constitutional and Pathologic Fluctuations of Capillary Action. W. Hagen.—p. 1507.
Disinfection of Urethra in Gonorrhea. J. Schereschewsky.—p. 1508.
Types of Meningococcus. K. Hundeshagen.—p. 1509.
Bruck's Precipitation Reaction in the Serodiagnosis of Syphilis. J. Zeissler.—p. 1510.
General Principles for Treatment of Pneumonia. Goldscheider.—p. 1512.
Examination of the Pregnant. M. Henkel.—p. 1515.
Treatment of Furuncles. A. Schule.—p. 1517.
The American Method of Selecting a Donor for Blood Transfusion. J. J. Halbertsma.—p. 1517.
Case of Fatal Barbital Poisoning. Bofinger.—p. 1518.
Diseases of the Upper Air-Passages and Tuberculosis Welfare Centers. Ballin.—p. 1518.
Health Insurance Societies in Relation to Physicians. S. Alexander.—p. 1519.

Bronchial Asthma.—Barth states that asthma is now quite generally recognized as a neurosis. The neurosis is evidenced by attacks of dyspnea occurring under conditions which in the majority of persons would fail to produce like symptoms. The labored breathing is due to the fact that the inspirations of the patient become progressively deeper, while the expirations continue to be incomplete, with the result that the distinctive position of the respiratory apparatus during inspiration is scarcely ever completely abandoned for that of expiration. This pathologic respiratory process is often caused by trivial changes, especially in the upper air-passages. Lung emphysema and bronchial catarrh are not asthma but the results of asthma. Treatment consists, therefore, (1) in enlightening the patient in regard to his condition and influencing him mentally; (2) in educating the patient to breathe regularly, especially as regards expiration, and particularly as soon as the onset of an attack is noted, and (3) in the discovery and local treatment or removal of the precipitating cause for the attack. Although early treatment offers the best prospects for recovery, treatment of old cases is also sometimes successful. Emphysema and bronchial catarrh may require special treatment in addition. Irritants that affect the patient unfavorably should, of course, be strictly avoided.

The Function of the Spleen.—Rautmann refers to his researches, in collaboration with Frey, to gain a more accurate knowledge of the erythrocyte-destroying activity of the spleen. In the venous blood from the spleen of dogs they found one million fewer erythrocytes per cubic millimeter than in the arterial blood. They noted that the spleen retained or destroyed greater numbers of erythrocytes that were damaged with respect to their osmotic resistance than it did normal erythrocytes. They increased experimentally the osmotic resistance of the erythrocytes by injection of phenylhydrazin, and found afterward that the number of erythrocytes in the venous blood of the spleen was the same as in the arterial blood, indicating that in this case the spleen was no longer able to hold back or destroy the now more resistant erythrocytes. To test the permeability of the spleen as a filter, nucleated erythrocytes (from birds) were injected directly into the splenic artery. Afterward, in the venous blood of the spleen, only a few nucleated erythrocytes were found. Other experiments carried out with Thoma showed that the leukocyte content of the venous blood of the spleen fluctuates considerably. After the intravenous injection of epinephrin, the total leukocyte count in the venous blood of the spleen was much greater than in the venous blood of the ear; there was also a considerable increase in the erythrocytes. In animals previously treated with typhoid bacilli or sheep erythrocytes, the venous blood of the spleen was found to be, on the second or third day after the injec-

tion, much richer in antibodies than the venous blood of the ear. By intravenous injection of epinephrin, the antibody content was still further increased, whereas, after prolonged ether narcosis, it was considerably less. The fact that in infectious disease the spleen increases in volume and is gorged with blood may doubtless be interpreted as a hyperfunctioning of the spleen in the nature of a very intensive formation of antibodies. In further researches Rautmann plans to test the effect of roentgen-ray stimulation of the spleen with a view to increasing the formation of antibodies.

Medizinische Klinik, Berlin

Nov. 12, 1922, **18**, No. 46

*Obstetric and Gynecologic Peritonitis. W. Benthin.—p. 1453.
Early Acute Tonsillitis in Influenza. A. Lukowsky.—p. 1458.
*Pseudo-Obesity. F. Kisch.—p. 1460.
Case of Polyglandular Insufficiency. Petschacher and Hönlinger.—p. 1462.
*Conservative Treatment of Large Hemorrhoids. P. Bonheim.—p. 1464.
*Action of Hydrotherapy and Heat on Blood. E. Stückgold.—p. 1465.
Malaria with Eruption Similar to Erythema Nodosum. Günther.—p. 1467.
Quantitative Wassermann Reaction in Blister and Other Fluids of Body. G. Wagner.—p. 1468.
The Exudative Diathesis. K. Blühdorn.—p. 1469. Conc'n.
Recent Urologic Literature. R. Paschkis.—p. 1472.

Improvements in Treatment of Obstetric and Gynecologic Peritonitis.—Benthin makes in suspicious cases a puncture of the abdomen. The presence of an exudate containing leukocytes is an indication to operate. It would be foolish to operate with simple inflammation of the adnexa with irritation of the peritoneum, but it is a grave mistake to omit operation in peritonitis. He uses lumbar anesthesia, and tries to make the operation as simple and mild as possible. He does not touch adhesions; leaves the pus where it is; puts one drain in Douglas' pouch, and two drains laterally, which he brings out through the lower end of the abdominal wound. At the end, 200 c.c. of ether are poured into the abdominal cavity. No organs are removed except when they are perforated. The after-treatment is considered very important, and starts with a subcutaneous infusion of 1 liter normal saline, with epinephrin. The first day every two hours injections of camphor, caffein and digitalis are given. The abdomen is kept warm by an electric light bath. Physostigmin was rarely necessary to stimulate the bowels. On the fourth day the drains are replaced by narrow strips of gauze. Benthin warns explicitly not to treat too actively, and attributes the comparatively good results (52 per cent. total mortality) to the ether and avoiding of injuries to the abdominal organs.

Pseudo-Obesity.—Kisch describes a group of patients who have an enlarged abdomen and are a little overweight, but who present only a slight increase in the fat of the abdominal walls. The diaphragm stands high and this can cause heart troubles resembling angina pectoris and shortness of breath (cardio-intestinal complex of symptoms). The usual treatment for obesity fails in these cases, but they are quickly ameliorated by cathartics, massage of the abdomen and application of heat on the abdomen. Kisch attributes the symptoms to a sympatheticotonic inhibition of the movements of the bowels.

Conservative Treatment of Large Prolapsed Hemorrhoids.—Bonheim reports good results in all his three cases with Boas' method of treatment of large hemorrhoids. The patients are kept in bed, get little food, and are given bitter salts and injections of morphin. The prolapsed hemorrhoids are treated three times daily for fifteen minutes (with two interruptions of one minute) with Bier's suction glass. The edema is kept up by hot applications. The patients are cured in ten to fourteen days. Morphin is necessary in the first days to combat the pains.

Action of Hydrotherapy and Heat on Blood.—Stückgold finds the amount of fibrinogen increased after baths in the electric light box.

Nov. 19, 1922, **18**, No. 47

*Immunity Against Smallpox and Vaccinia. H. A. Gins.—p. 1483.
*Age Predisposition in Children. A. Peiper.—p. 1486.
*Cirrhosis of Liver with Icterus and Splenomegaly. R. Bauer.—p. 1489.
*Healing of Wounds After Roentgen Rays. E. Vogt.—p. 1491.
Clinical Action of Strychnin. E. Baráth.—p. 1492.
Radium Emanation in Arthritis. T. Vaternahm.—p. 1493.
*Itching of Ears in Pyrosis. D. Engel.—p. 1495.
Use of Tellurium for Determination of Death of Tissues. P. Rostock.—p. 1499.
Diseases of Urethra. E. Portner.—p. 1501.
Recent Literature on Diseases of Heart and Arteries. E. Edens.—p. 1503.

Immunity Against Smallpox and Vaccinia.—Gins reviews historically the researches on smallpox immunity. He points out that the general immunization from systematic vaccination has changed smallpox from a disease of children into a disease of old people. In the years 1758-1774 the deaths from smallpox in Berlin were: 0.07 per cent. in people over 40 years; 1.25 per cent. from 39 to 12 years old, and 98.7 per cent. under 12 years. In 1916-1917, there were 90.56 per cent. over 40 years, 7.32 per cent. from 39 to 12 years, and only 2.12 per cent. under 12 years old.

Predisposition of the Age in Children.—Peiper reviews the relation of the age to different diseases of children.

Cirrhosis of Liver with Icterus and Splenomegaly.—Bauer describes a case of an atrophic cirrhosis of liver with icterus and splenomegaly. The patient died after splenectomy from a hemorrhage from an ulcer of the stomach. The spleen did not show any fibrosis, nor deposits of iron.

Healing of Wounds After Roentgen Rays.—Vogt finds that previous application of roentgen rays does not endanger the healing of the subsequent laparotomy. There are no objections to irradiate a carcinoma of the uterus before the radical operation is done.

Itching of Ears in Pyrosis.—Engel observed that some patients suffering from pyrosis complained about itching in the external meatus at the time of their trouble. The itching was usually in the left ear. He considers it a reflex gastro-auricular phenomenon, due to the vagus.

Münchener medizinische Wochenschrift, Munich

Oct. 27, 1922, **69**, No. 43

*Correction of Swelling of Colloids. H. Schade et al.—p. 1497.
Peculiar Epidemic of Bulbar Paralysis in an Institution. John and Stockebrand. —p. 1500. Conc'n No. 44, p. 1544.
Psychiatric Observations in Javanese. A. Gans.—p. 1503.
Leukopenia Following Non-Specific Intracutaneous Injection. E. F. Müller.—p. 1506.
Late Eunuchoidism and Adiposogenital Dystrophia. W. Hueck.—p. 1507.
*Inulin in Diabetes. R. Offenbacher and W. Eliassow.—p. 1508.
Strangulation Ileus in Movable Colon. W. Porzelt.—p. 1510.
*So-Called Nervous Dermatoses. A. Marcus.—p. 1510.
Technic of Artificial Pneumothorax. W. Neumann.—p. 1511.
Comment on Selheim's "Torsion of Organs." G. Schaetz.—p. 1512.
Flexible Gastroscope. M. Sussmann.—p. 1513. Reply. R. Schindler.—p. 1513.
Did Newton Suffer from Influenza-Encephalitis? E. Ebstein.—p. 1513.
Diagnosis of Some Diseases of the Teeth. Walkhoff.—p. 1514.

Experiments on Therapeutic Correction of Swelling of Colloids.—Tannic acid and formaldehyd counteract to a certain degree the toxic action of very diluted hydrochloric acid on tadpoles. Therapeutic possibilities are discussed.

Inulin in Diabetes.—Offenbacher and Eliassow find that inulin seems to be utilized better, by diabetics, than glucose and levulose.

So-Called Nervous Dermatoses.—Marcus reports a few cases of "nervous" dermatoses cured after the real cause was discovered and removed. A universal eczema recurring with each menstruation was traced to the artificial leather support used for the menstrual bandage. Another case was due to the habitual addition of a little of a certain antiseptic to the bath water. Other cases were due to the use of a perfume, different toilet creams, even of good makes, petrolatum, salves, etc. He gives a list of nineteen other toilet articles that have induced skin affections. In one case a man's periodic itching and crop of furuncles were finally traced to work in the garden with Japanese primroses.

Nov. 3, 1922, **69**, No. 44

*Psychic Influence on Secretion in Stomach and Duodenum. O. Langheinrich.—p. 1527.
Clinical Picture of Deforming Juvenile Osteochondritis of the Hip Joint. G. Riedel.—p. 1529.
Persistence of "War Lymphocytosis." B. Spiethoff.—p. 1532.
*Biologic Diagnosis of Tuberculosis. E. Nehring.—p. 1533.
Ponndorf's Diagnostic Method in Different Dermatoses. L. Görl and L. Voigt.—p. 1534.
*Fractioned Examination of Cerebrospinal Fluid. K. Eskuchen.—p. 1536.
Specific Staining of Amyloid by Congo Red. H. Bennhold.—p. 1537.

Rarer Indications for Roentgen Treatment in Gynecology. H. Martius.—p. 1538.
Apparatus to Insure Precision in Gynecologic Deep Roentgen Treatment. W. Simon.—p. 1539.
Influence of Number of Interrupters on the Superficial and Deep Dose of Roentgen Rays. H. Rahm.—p. 1542.
*Costal and Abdominal Breathing. L. Deppe.—p. 1543.
Waterwheel Sound in Heart Disease. J. Wagner.—p. 1543.
A Futile Method for Statistics on Heredity. W. Weinberg.—p. 1544.
Cough and Its Treatment. A. Bacmeister.—p. 1549.

Psychic Influence on Secretion in Stomach and Duodenum.—Langheinrich hypnotized the subject and tested the influence of suggestions of intake of butter of bouillon on the secretion in stomach and duodenum. There were distinct differences, but he warns not to neglect the mechanical and chemical elements involved.

Biologic Diagnosis of Tuberculosis.—Nehring finds that the double intercutaneous injection of 1/10 mg. and 1 mg. old tuberculin gives much better results than Pirquet's method.

Fractioned Examination of Cerebrospinal Fluid.—Eskuchen confirms Weigeldt's investigations, and demands the counting of cells in the first and last drop of the cerebrospinal fluid. The differences are very great, and are chiefly due to the sedimentation of the fluid in the body. The distribution of the bodies causing the Wassermann and colloidal gold reaction is more even.

Costal and Abdominal Breathing.—Deppe does not believe that men's breathing is abdominal and women's costal. It seems rather to be individual. The best type is the combined costo-abdominal breathing.

Wiener klinische Wochenschrift, Vienna

Nov. 2, 1922, **35**, No. 44

Chronic Gastritis. O. Stoerk.—p. 855.
*Stability of Colloids of Plasma. W. Starlinger.—p. 860.
Tuberculosis Due to Direct Inoculation and Its Surgical Treatment. G. Stein.—p. 862.
Influence on Nervous System of Obstruction of Nose. Stein.—p. 865.
Comment on Porges' "Hunger Pains." G. Schiff.—p. 866.
Present Status of Tuberculosis. M. Weiss.—p. 866.

Influence of Light on Stability of Colloids of Human Plasma.—Starlinger found that the amount of fibrinogen precipitated from a citrated plasma is diminished after addition of eosin or ferrous sulphate and exposure to light (especially short waves). The phenomenon is less pronounced with globulins, and still less with albumins. Starlinger believes, that this stabilization of colloids is due to the partial hydrolysis of the proteins by a transfer of oxygen by means of the catalyzers. This increases the amount of the products which stabilize the colloids.

Nov. 9, 1922, **35**, No. 45

Borderland Between Gynecology and Urology. Richter.—p. 875.
*Pathology of Respiratory Metabolism. P. Liebesny and H. Schwarz.—p. 879.
*Depersonalization Following Meat Poisoning. A. Pilcz.—p. 883.
*Chemical Aspects of Tuberculosis of the Bones. H. Reh.—p. 884.
*Instability of the Colloids in the Blood Plasm. J. v. Darányi.—p. 885.
Remarks on Bum's "Treatment of Sciatica." R. Grünbaum.—p. 886.
Reply. A. Bum.—p. 886.

Pathology of Respiratory Metabolism.—Liebesny and Schwarz confirm the normal basal metabolism in obesity of pituitary origin. Powdered thyroid increased it in these cases. The basal metabolism is increased in diseases of the hemopoietic organs with increased production of cells, as in leukemia, pernicious anemia, hemolytic icterus. It was normal in aplastic anemia.

Case of Depersonalization Following Meat Poisoning.—Pilez describes a case presenting all the symptoms of Krishaber's "loss of self-consciousness"—disturbance in the sense of reality—with the typical preservation of the ability to act like a healthy person. This state started during a severe meat poisoning and lasted for seven weeks.

Tuberculosis of Bones.—Reh does not like to treat this chronic disease chronically. His method of choice is to operate, except in the rare cases where it is strictly contraindicated by the extension of the operation, possibility of severe infection, the certainty to hurt vital organs, and the general weakness of the patient

Lability of Colloids of the Blood Plasma.—Darányi discusses some reactions of blood, serum and plasma, because he finds that they were not yet considered from the viewpoint of lability of colloids in one paper. They were explained so only separately. The speed of sedimentation of blood corpuscles, the precipitation of plasma and serum by different means run to some extent parallel, and may be considered as a measure of disintegration of tissues. Darányi considers his own method for testing the instability of the colloids in the serum as most advantageous.

Zeitschrift für Urologie, Leipzig

1922, **16**, No. 11

*Endemic Urinary Calculi in Siam. O. Schneider.—p. 473.
Bilharzia Eggs in the Sperma. E. Pfister.—p. 488.
Plastic Induration of Penis. R. Rothschild.—p. 490.

Endemic Urolithiasis in Siam.—Schneider reports from Bangkok his experiences with stones of the bladder. The cause is unknown. The poorer classes are much more subject to the disease than the wealthy; 42 per cent. of the cases were under 15 years old. Anal prolapse leads us to suspect a stone. Lithotrypsy could be used only exceptionally. In his last series of seventy cases all were males except five. In four other cases he removed a calculus from the urethra of infants, less than a year old, which had been exclusively breast fed.

Zentralblatt für Chirurgie, Leipzig

Oct. 7, 1922, **49**, No. 40

*Extra-Articular Measures to Induce Ankylosis. J. Hass.—p. 1466.
*Tendon Regeneration. E. Wehner.—p. 1467.
"Preferable Method for Anesthetization." Hinterstoisser.—p. 1469.
Spontaneous False Reduction of Incarcerated Hernias. E. Haim.—p. 1470.
*Strong Sugar Solutions as Preventive of Operative and Anesthesia Mishaps. B. Tenckhoff.—p. 1472.
*Plastic Substitute for Stomach. V. Hoffmann.—p. 1477.
Semmelweis not Lister. Reply to C. Bayer's Article in No. 33. F. Bruck.—p. 1479.

Extra-Articular Measures to Induce Ankylosis of Hip-Joint.—Hass describes with an illustration a method he has used in three cases of highly destructive and recurring coxitis to induce ankylosis of the hip-joint. A curving incision is made about the great trochanter as in Lexer's method of arthroplasty. The great trochanter is cut off slanting, and, together with the attached muscles, it is pushed along upward until the tip fits into a recess hollowed out to fit it in the ilium, just above the roof of the acetabulum. The trochanter is then sutured with stout silk or silver wire to hold it in this place, suturing it to the femur and to the ilium above. Then a plaster cast is applied for three months in abduction. The operation is thus entirely outside the joint. Especially adapted for this operation are those cases in which the head of the femur is destroyed to such an extent that the great trochanter is brought near to the ilium. The advantages claimed for this procedure over the transplantation of a piece of the tibia are: No necessity of molesting the tibia, good nutrition of the pedunculated transplant, broad and close contact of the raw bone surfaces, and above all, greater solidity of the local osteoplasty. In the three cases the operation was performed more than a year ago, and in two cases a solid bony ankylosis has been secured. In one case the union between the trochanter and the ilium is only fibrous. The joint is held by this operation as if by a big bolt, bolting it into a solid whole.

Theory of Hormone Action of the Synovia in Tendon Regeneration.—Wehner refers to Salomon's finding that outside of the tendon sheath the tendon ends are sure to heal, whereas within the sheath they never heal. Salomon's view is that the absence of regeneration in the enclosed tendon is due to inhibiting hormones in the synovial fluid. On the basis of his theory, Salomon had recommended no suturing of the tendon sheaths but rather the removal of a large portion of the tendon sheath. In his experiments on from 1 to 2 year old rabbits and dogs 6 months old, Wehner was able to secure excellent regeneration of the quadriceps tendon (after excision of the patella) without a suture or bridging over of the defect or the use of a fixation bandage. What he emphasizes is the fact that the synovia of the knee joint, which, without doubt came in contact with the tendon defect or the regenerating tendon tissue exerted no action that inhibited regeneration.

Strong Solutions of Glucose as Preventive of Operative and Anesthesia Mishaps.—Tenckhoff recounts the favorable results secured by the slow injection of 10 c.c. of a 10 per cent. solution of glucose the evening before an operation. The injection sometimes caused chills. The effect on the post-operative pulse was marked. The frequent acceleration of the pulse was not noted, nor did it become weak and small but remained slow and strong, characterized by high tension, an indication that the glucose has a favorable effect not only on the central organ but also on the peripheral portions of the circulatory system, tending to raise the blood pressure. It was surprising to note that even after the most serious operations the pulse curve remained about the same after the operation as before. It appears that the effect of the glucose persists for two or three days and thus helps the patients over the dangerous period.

A Plastic Substitute for a Resected Stomach.—Hoffmann recalls that persons who have undergone total stomach resection are inconvenienced by the fact that they can eat only light meals and therefore have to eat frequently. To improve this condition he proposes an operation which he has performed thus far only on the cadaver and on animals. With a simple technic it provides a receptacle with twice the capacity of the small intestine. The esophagus is joined to the jejunum at a point where a long loop of the small intestine can be secured. Between the afferent and efferent legs of this jejunum loop a long anastomosis is established, which, beginning just below the tip of the loop sutured to the esophagus, throws the two legs into one cavity, the jejunum thus forming a receptacle 15 cm. long. The food passes from the esophagus through a short double-passaged portion of the intestine into the newly created reservoir. Also the secretions of the liver and the pancreas flow into this reservoir. It is advisable to carry out the entero-anastomosis before the esophagus is united with the intestine, since a loop of intestine that is fixed in position is not so accessible. The circumference of the upper small intestine in man is from 4 to 6 cm. By the side-to-side suture of the two legs of the loop of the jejunum we obtain a reservoir with a circumference of from 5 to 9 cm. The time required for the anastomosis is so short that this secondary operation can be easily allowed to follow such an extensive intervention as total or subtotal gastric resection. In some instances it might be better to perform the secondary operation at a second sitting (under local anesthesia). The storage receptacle thus created is, to be sure, a very imperfect substitute for the stomach. However, it affords the patient an opportunity of eating much more at a meal. He gives an illustration of the technic.

Zentralblatt für Gynäkologie, Leipzig

Sept. 2, 1922, **46**, No. 35

Contribution to the Subject of "Narrow Pelvis." W. Zangemeister.—p. 1395.
Pregnancy after Bilateral Sactosalpinx and Abscess of Douglas' Pouch. B. Ottow.—p. 1406.
Perforation of the Uterus and Severe Injury of the Adnexa. W. Stoeckel.—p. 1410.
*Artificial Glycosuria in Pregnancy. A. W. Bauer.—p. 1413.
Complete Inversion of the Uterus in Childbirth. C. Neis.—p. 1421.

Artificial Glycosuria in Pregnancy.—Bauer's researches lead him to state that, although artificial glycosuria induced by the ingestion of glucose does not furnish a differential diagnosis between extra-uterine pregnancy and tumor of the adnexa, its value must be recognized for the early diagnosis of pregnancy. In 200 cases the sugar content of the blood, following the ingestion of 100 gm. of glucose on an empty stomach and during rest in bed, increased, on the average, from 0.08 to 0.2 per cent. The sugar was taken in 200 gm. of tea, drunk rapidly, and blood and urine were drawn for examination every ten minutes for an hour and again thirty minutes later, and thirty minutes after this. Thirty of the women were nonpregnant; 120 were in the first three months of pregnancy, and fifty were in the other months of a pregnancy. All the women pregnant for less than three months showed pronounced glycosuria thereafter, while this was evident only in 66 per cent. of the other pregnant women, and only in one of the thirty nonpregnant women. In 300 other pregnant women examined, spontaneous glycosuria was found only in 0.75 per cent., and the sugar content of their blood was within normal range.

Zentralblatt für innere Medizin, Leipzig

Nov. 18, 1922, **43**, No. 46

Substitute for Iodin. H. Friedenthal.—p. 745.

Nov. 25, 1922, **43**, No. 47

Recent Progress in Neurology and Psychiatry. M. Goldstein.—p. 761.

Mededeel. v. d. Burg. Geneesk. Dienst, Java

1922, No. 3. English Edition

*Hookworm in Soil at Batavia. J. A. de Nooy.—p. 125.
*Working of Slow Filtering Sand Filter in the Tropics. P. C. Flu.—p. 135.
The Aorta in Malay Men. H. Müller.—p. 167.
Differentiating Points of Certain Mosquitoes. E. Rodenwaldt.—p. 185.

Ankylostoma Larvae in Soil of Native Villages in Java.—De Nooy found that the mature larvae have a greater power of resisting desiccation than is generally accepted. The infection of the soil plays an important part in the infection and reinfection, but flies aid likewise.

Slow Working Sand Filter.—The filter was arranged so that each square meter of filter surface yielded only 2.4 cubic meters of water during the twenty-four hours. The water is treated beforehand with aluminum sulphate. This arrangement supplies good drinking water from the turbid water of the rivers of the Java lowlands, but the filter must be exposed to the sunlight, and the process must be under the daily control of skilled technical men and bacteriologic chemists. Otherwise, other methods are preferable.

Acta Medica Scandinavica, Stockholm

Nov. 7, 1922, **57**, No. 1

Importance of Tissue Cultures in Experimental Medicine. Fischer.—p. 1.
*Glycosuria of Pregnancy. K. Motzfeldt.—p. 10.
Question of Peristaltic Action in Capillaries. E. Kylin.—p. 25.
Standardization of Hemoglobinometers and Its Importance for Index Calculation. H. C. Gram.—p. 27.
*Induced Motor Action. H. Gertz.—p. 41.
*Attempt at a Differentiation of Gonococcus Types. O. Thomsen and Erik Vollmond.—p. 77.

Glycosuria of Pregnancy and the So-Called Renal Diabetes.—Motzfeldt warns not to underestimate a seemingly renal diabetes; it may change into the real form. In one case with hypoglycemia, hyperglycemia was found when reexamined one year later. He discusses a case of renal diabetes occurring during pregnancy, and recurring at a later pregnancy. In a man of 27 the renal diabetes was transitory. In the third case there seems to be a connection between the diabetes and a traumatic neurosis. (In English.)

Induced Motor Action.—Gertz repeated extensively some observations made by Purkinje, relating to dizziness, and long forgotten. The subject is placed on a disk rotating on its axis, and turns in the opposite direction, so that he does not change in reality his relation to the surroundings. Although the vestibular apparatus is not irritated, yet after stepping down from the disk and taking a few steps, the subject feels himself drawn toward the side toward which he was turning. Since he knows, that he did not have the intention to continue to turn, he may become dizzy. This experiment constitutes a new physiologic source of dizziness, being neither of vestibular nor of visual origin. The phenomenon resembles the experiment of the hand pressed against the wall, described by Salmon and Kohnstamm. Gertz modifies their experiment in an advantageous way. He distinguishes in direct motor innervation two parts: One constitutes the direct impulse to the act; the other consists in arrangements of the nervous conditions which direct or end the motion. The vestibular apparatus and the cerebellum are parts of the second, which Gertz calls the system of predisposition. He believes that the exercise induces a predisposition for its continuation, and that this is responsible for the phenomena described. (In French.)

Attempt at a Differentiation of Gonococcus Types.—Thomsen and Vollmond assert that a simple complement fixation test does not allow us to state definite types. Absorption

experiments, however, have made it possible to separate three groups, although some strains remained outside. (In English.)

Hospitalstidende, Copenhagen

Nov. 8, 1922, **65**, No. 45

*Spastic Ileus. H. Jacobsen.—p. 753.
The Ureter During Hysterectomy for Cancer. N. Tuxen.—p. 759.
What Has Been Learned from the Gullstrand Lamp. C. Rasmussen.—p. 760.

Spastic Ileus.—Jacobsen operated twice on the girl of 7 in the course of two days. The first laparotomy had been done on the assumption of invagination but nothing abnormal could be found except that certain segments of the intestine seemed to be contracted. No mechanical obstruction could be discovered. After a day of subsidence of all symptoms, they returned again and the abdomen was opened anew. Nothing could be found except this tendency to local spastic occlusion of the bowel. During the ten months since there has been no return of symptoms and the child seems well. By the double laparotomy the absence of any other cause for the tendency to ileus beyond the spastic contraction seems to be absolutely established. The differential diagnosis can be only by exclusion, although it is well to bear in mind that the spastic occlusion of the bowel is often multiple. The absence of blood in the stools testifies against intussusception with which it is most likely to be confounded. When spastic ileus is certain, morphin, atropin, lavage of the stomach, enemas and laxatives may be indicated. Morphin can be given by the rectum. As a last resort, enteroanastomosis above the spasm may be considered.

Hygiea, Stockholm

Nov. 15, 1922, **84**, No. 21

*The Diazo Reaction in Relation to Leukocyte Count. N. Svartz.—p. 869.
Epidemic Encephalitis. Etiology and Epidemiology. C. Kling.—p. 894. Cont'd.

The Diazo Reaction and the Leukocyte Figure.—Svartz discusses the possible reasons for the low leukocyte count which seems to accompany the diazo reaction. The reaction becomes more pronounced as the number of leukocytes drops, and vice versa, as is shown by the charts from seventeen cases of typhoid, paratyphoid or tuberculosis. The proportional relations are not always absolute, but leukopenia with a pronounced diazo reaction is such a constant finding as to exclude casual coincidence. One and the same factor may be responsible for both. No evidence has been found to date connecting the diazo reaction with any substance liberated by destruction of leukocytes. The German, Russian and Scandinavian literature on the diazo reaction is reviewed, and it is emphasized that a positive reaction does not necessarily indicate an unfavorable outcome, but an acute febrile disease with a positive diazo reaction should suggest typhoid. In forty-four cases of typhoid tested, the reaction was pronounced in the first week in all but two and these were extremely mild cases.

Ugeskrift for Læger, Copenhagen

Oct. 19, 1922, **84**, No. 42

*The Evidence in Accident Insurance. G. Philipsen.—p. 1389.
*Pernicious Anemia with Stenosis in Intestine. E. Meulengracht.—p. 1401.

Workmen's Compensation from Medical Standpoint. — Philipsen is chief of the Denmark council that has to pass on the demands for state accident and health insurance. He discusses in turn the various forms of disability, saying of traumatic neuroses that the council abides here by the evidence of skilled neurologists. With multiple sclerosis, as no one knows its etiology, if it develops after a well authenticated trauma, which might possibly have brought on the disease, the council accepts this without question and gives full compensation. The same applies to general paresis. When it develops apparently in connection with an absolutely authenticated injury to the head, full compensation is generally allowed. The causal or aggravating effect of a trauma—even emotional trauma—in exophthalmic goiter is accepted usually without question. An infectious disease contracted in the hospital while taking treatment for a fractured limb, for example, is accepted as entitling to compensation, as also pneumonia or pleurisy developing during the sickbed required by the accident. In one case the man had been sent to the city for an operation on account of an accident, and in the city he succumbed to influenza. The council accepted that the influenza must have been in the incubation stage and that the exposure to the weather had rendered the course so grave. The council is more skeptical in regard to the connection between an accident and the development of diabetes, but occasionally it has been accepted as a consequence of an accident; a case of this kind has just been appealed to the higher court. Gastric ulcer is not accepted as a consequence of accident, even when a severe trauma has preceded its manifestations, but in rare cases the accident has been admitted to have been responsible for the flaring up of the lesion. The greatest difficulty is in cases of insignificant accidents to elderly persons, injury to an ankle or finger. The immobilization may have been too long, and the subject brings a physician's certificate to the effect that he is totally disabled. Sometimes a new examination shows that the character of the case has been misconstrued or else that the physician has been imposed on by simulation or exaggeration.

Pernicious Anemia with Stenosis in the Intestines.—Meulengracht adds two more cases to the list of those he has encountered in which stenosis of the small intestine was found with classic pernicious anemia. In the first here described, a stretch of the intestines with several old and new tuberculous strictures was resected; the woman of 64 was too debilitated to recuperate. In the second case the stenosis was evidently due to adhesions. No signs of tuberculosis were found but the roentgen findings indicate stenosis. The irritation of the mucosa of the bowel above the stricture allows resorption of substances which probably entail the blood disease.

Oct. 26, 1922, **84**, No 43

*Traumatic Injury of Nervous System. V. Christiansen.—p. 1444.
Rubeola Without Eruption. G. Fløystrup.—p. 1461.

Tardy Consequences of Trauma of Nerves.—Christiansen protests against the Danish legislation which refuses to consider a causal connection between accidents and affections which develop more than three years later. He describes a number of instructive cases in which the connection seemed to be beyond question although the interval had been nine, ten, up to twenty-one years. He emphasizes one clinical picture in particular, severe atrophy and sensory disturbances in the ulnar nerve domain with a deforming arthritis in the elbow and a history of dislocation of the elbow ten, twenty years before. The function of the elbow may be only slightly impaired by the bone affection; in one case merely the last five degrees for complete extension were hampered, but roentgenoscopy confirmed the bone lesion. He describes other cases in which a brain cyst developed at the site of a trauma of the head twenty or thirty years before. The interval was sixteen years in one case, and the man succumbed to embolism after the operation on the cyst. Christiansen regards the man's heirs as entitled to compensation as there had been more or less indications of irritation of the cortex during this long interval, as likewise in another case in which a fibrosarcoma was removed from the site of trauma ten years before. This man recovered full earning capacity two years after the operation. Instances of tardy traumatic epilepsy are cited which reproduce the various stages of genuine epilepsy. He describes in addition a case of trauma to the back of the head which was followed at once by unconsciousness and drowsiness. The third day there was total oculomotor paralysis. The somnolency persisted for two or three weeks but the condition was completely normal once more by the end of the month. The young man had been knocked down by a motorcycle, but the attending physician diagnosed epidemic encephalitis from the tendency to somnolency and the ptosis, and the claim for accident indemnity was rejected at first.

Upsala Läkareförenings Förhandlingar, Upsala

Oct. 28, 1922, **28**, No. 1-2

Grave Familial Jaundice in the New-Born. I. Thorling.—p. 1.
A Theory for Color Vision. H. Ohrvall.—p. 77.
Emboiectomy. Three Cases. P. Häggström.—p. 107.
Psychology and Biology. H. Sjöbring.—p. 133.